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MATERNAL WELFARE AND THE NEGRO

Chairman's Address

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Many types of agencies are concerned today with the problems of pregnancy. Medical, nursing, hospital, public health, educational and governmental bodies, stimulated by reviews of the vital statistics of reproduction, have interested themselves in improving maternal welfare. This term implies the full use of all facilities for the promotion of adequate maternity care. During the past decade great strides have been made in this direction.

An early educational effort by the government, the Sheppard-Towner Maternity and Infancy Act, passed by Congress in 1921 and administered by the Children's Bureau from 1922 to 1929, established the principle of grants-in-aid for federal and state cooperation in maternal welfare. The Social Security Act of 1935, which became effective in 1936, greatly expanded the educational features of the earlier act and made prenatal clinics and public health nursing and nutrition services more readily available to a larger proportion of pregnant women. Under the Sheppard-Towner Act $1,900,000 was made available to the states each year. Under the Social Security Act the annual amount is $5,820,000.

The continued provisions of the Social Security Act have been overshadowed by the wartime Emergency Maternity and Infant Care program which has provided free care for the wives and newborn infants of men in the lower pay grades of the military service. The sum allotted by Congress for this program for the fiscal year 1945 was $42,800,000.

In recent months legislative proposals have been advanced to make complete maternity care at federal expense or through compulsory health insurance available to all women electing such benefits.

During these same years the medical profession has extended maternal welfare by emphasizing better antepartum care, by stressing the value of conservatism in obstetric surgery, by aiding in the revision of hospital regulations regarding consultations, operative privileges and obstetric facilities, by promoting graduate education and training and by research. Physicians have also given instructions in maternity hygiene to their patients, the husbands and the general public. Through maternal welfare committees they have carefully reviewed individual maternal deaths and endeavored to discover and eliminate the conditions responsible for those that were deemed avoidable. Such committees have acted as advisers to local, state and federal health agencies. Some competent observers state that the reduction in maternal mortality in this country in recent years has been due largely to these activities of the medical profession; the profession assuredly has had an important part in the reduction.

Outstanding among the many individual and organized efforts in this field must also be mentioned the work of the American Committee on Maternal Welfare, the American College of Surgeons, and the American Board of Obstetrics and Gynecology. Notable, too, have been the contributions of the Maternity Center Association, the National Health Council for Mothers and Babies, the American Hospital Association and the American Public Health Association.

The results of these intensive, expensive and combined professional and lay efforts toward improving maternal welfare should be reflected in the trend of the puerperal death rate. Prior to 1933, however, assessment has been difficult; from year to year the Birth Registration Area established in 1915 expanded as states were added, and it was only in 1933 that statistics on births and deaths became available for the entire United States. Some progress was effected during these years, but even under the Sheppard-Towner Act the evidence was discouraging. In the group of states in the Birth Registration Area each year of the period 1921 to 1929, the rates for 1921 and 1929 were, respectively, 67 and 64 per 10,000 live births,[1] and the total decrease during these eight years of federal and state cooperation under the Sheppard-Towner educational program amounted to only 4.5 per cent.

In 1933, when the entire continental United States came to be included in the Birth Registration Area, the rate was 62 per 10,000 live births; in 1935 it was 58. Each year since then it has dropped progressively. In 1943, the latest year for which I have United States Bureau of Census Reports, it was 25. The decrease since 1933 amounts to 60 per cent; that during the eight years of operation under the Social Security Act amounts to 57 per cent.

This reduction must be regarded as an outstanding achievement in public health. It may be attributed to the interest and participation of professional and lay workers, the implementation of their efforts in education and maternity care by federal and state funds, the advances in obstetric practice, the newer treatments against infection and the increasing maternity hospitalization, especially in rural communities.

Although the reduction in the puerperal death rate is gratifying, careful analysis of the index shows a definite disparity between the rates for the white and the Negro mothers. Year after year the Negro puer-

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1. Vital Statistics, United States Bureau of the Census, and Reports of State and Municipal Bureaus of Vital Statistics.

peral death rate has been double or more than double the rate for white mothers. This situation merits serious consideration.

Negroes constitute 10 per cent of the population of the United States. They are more numerous in the South, it is true, yet their ratio to the white population in many northern communities is so high that the problems of the Negro, especially those of maternity care, are of considerable importance. In connection with this situation former Governor Jones of Louisiana wrote recently, in *Liberty* magazine, that the migration of the Negro northward due to the war and the mechanization of agriculture had been over 100,000 annually since 1940. He quoted Dr. Edwin R. Embree, president of the Julius Rosenwald Fund, an authority on the Negro, to the effect that in fifteen years the ratio of Negroes in the North and in the South may be reversed, with 9 million in the North and 4 million remaining in the South. This gigantic problem of millions of Negroes voluntarily displaced and thrust on sections unfamiliar with the peculiar problems which inevitably arise holds for the obstetrician and for others the need for much forethought and planning.

In 1943 in the United States 1 infant out of every 9 born alive was Negro. In the southern states 1 infant out of every 4 was a Negro. In New York city and Philadelphia with large and increasing Negro populations, the 1938 births to nonwhite races comprised, respectively, 7 and 16 per cent of all births; in 1944 they comprised, respectively, 9 and 18 per cent. In other northern cities which are large industrial centers the 1943 percentages varied from 4 for Boston to 16 for St. Louis. Negro births in California more than trebled from 1939 to 1944; there were 1,741 in 1939, and 5,589 in 1944.[1]

A disproportionately high maternal mortality rate is evidenced for the Negro population throughout the period of record. In 1933 the United States rate for the Negro was 100 as compared with 56 for the white. In 1935, the year before the Social Security Act became effective, the rate for the Negro race was 95, that for the white was 53. During the years of operation under this act substantial decreases occurred in the rates for both races. The 1943 rate for the Negro was 51, that for the white was 21. The decrease amounts to 46 per cent for the Negro, 60 per cent for the white. The 1943 rate for the Negro is almost two and a half times that for the white; it is the rate that prevailed for the white in 1936.[1]

The excess of the Negro rate over the white rate appears in both the North and the South; it is appreciable in every state that has a considerable number of Negro births. In Georgia and in Mississippi in 1931 the Negro puerperal death rate exceeded the white by 45 per cent; in 1943 the excess of the nonwhite over the white amounted to 74 per cent in Georgia and 100 per cent in Mississippi. In Michigan, where over 90 per cent of the nonwhite births occur in cities and largely in Detroit, the nonwhite puerperal death rate in 1943 was 159 per cent higher than the white. In New Jersey in 1943 the rate for the nonwhite was 138 per cent higher than the rate for the white.[1]

Why should the Negro puerperal death rate remain double or more than double the white rate and show, in comparison, a ten year lag in its reduction? Is it because of some inherent difference of a constitutional nature, a biologic inheritance? Are the obstetric problems of the Negro essentially unlike those of the white? Does the cause lie in the contrasting situations of economy, education or social heritage?

The racial differences of the Negro compared with the white in reaction to diseases, both as to incidence and pathology, according to Raymond Pearl,[2] are so great that they should be taken into account in planning health programs. Although, as Pearl remarked, the Negro may enjoy a greater biologic fitness than the white in some respects, in others he is apparently distinctly less well adapted to the general environment in which he must live and have his being. On the other hand, Rudolph Matas,[3] writing fifty years ago on the Surgical Peculiarities of the Negro, discounted any inherent ethnic predispositions but felt that such apparent predispositions were due to conditions of environment. As recently as this year, Eastman [4] writes that he does not consider that the Negro woman faces any especial or intrinsic hazard in maternity because of her race. He believes that if Negroes had adequate medical attention it might well turn out that there were no inherent differences between the two races.

There is a greater incidence of hypertensive disease in the Negro. It occurs three times as frequently as in the white and appears earlier in the Negro woman. Nephrosclerosis and hypertensive cardiac disease are more frequent in the Negro woman than in the Negro man or in the white race. This factor may explain, in part, the greater incidence of toxemia of pregnancy in the southern Negro. The reaction of the Negro to tuberculosis is well known. Any immunity the Negro may have developed to conditions in the South is quickly lost through migration northward, which brings about sudden and often extremely unfavorable environmental changes.

The relatively poor economic status of the Negro seriously influences the maternity situation. It favors poor hygienic surroundings, the cabin with no sanitary conveniences in the rural South and the congested housing in the northern cities, where the Negro becomes segregated in the oldest and poorest dwellings. Both as a result of economy and of ignorance the nutrition of the Negro is poor; this is frequently observed in the South, where the heavy salt pork diet may predispose to toxemias of pregnancy. The Negroes' poor nutritional intake favors lowered resistance to infection. Anemia of a nutritional type is a common characteristic of the pregnant Negro woman. Not only does she react poorly to hemorrhagic complications, but, as Bickerstaff [5] has shown, this anemia predisposes to a greater degree of puerperal morbidity. Rickets, a deficiency disease, with pelvic deformity and consequent dystocia is still common, though, according to Douglass,[4] decided improvement has occurred in recent years in Baltimore.

Syphilis, the outstanding social problem of the Negro, together with poor economic factors, is responsible for excessively high pregnancy wastage, which always implies a high maternal death rate. The stillbirth rate among Negroes is approximately double the white rate, and it is well known that Negro stillbirths are incompletely registered. The high Negro stillbirth rate is, of course, closely connected with the high maternal mortality rate of the race; it has been repeatedly shown that the risk of maternal death is much greater when the infant is stillborn than when it is born alive. The Negro has a high incidence of pelvic inflammatory

2. Pearl, R.: Biological Factors in Negro Mortality, Human Biol. **1**: 229-249, 1929.
3. Matas, R.: The Surgical Peculiarities of the Negro, Tr. Am. S. A. **14**: 483-610, 1896.
4. Personal communication to the author.
5. Bickerstaff, H. J.: The Relationship Between Late Prenatal Hemoglobin Levels and Febrile Puerperal Morbidity, Am. J. Obst. & Gynec. **43**: 997-1006, 1942.

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disease; this, in turn, tends to an increase in the incidence and severity of puerperal infection.

Whether or not it is dependent on a lower moral code, crowded housing, neglect of adolescent children or a psychologic basis, there is a high rate of illegitimacy in the Negro race. Illegitimacy predisposes to the interruption of pregnancy with resulting infection, to pregnancy in the very young and to a lack of what maternity care may be available, all factors known to be associated with a high mortality rate. Frequent pregnancies and extremely large families are the rule in groups with a low economic status and decidedly affect maternal mortality; the Negro is no exception to these influences. Family planning programs which are now being carried on among southern Negroes are too recent to show a measurable effect on maternal mortality.

The largely rural distribution of the Negro in the South predisposes to home delivery, with a lack of facilities to combat emergencies and with inability to obtain prenatal care: the scarcity of physicians and economic reasons result in an inferior grade of attendant at birth—the untrained midwife.

The educational and intellectual deficiencies of the Negro favor poor obstetric results. These unfavorable factors are often discouraging to those who attempt health education programs among Negroes. The white patients fare better through years of conditioning by medical attention. The Negro's reaction to disease is primitive. He delays seeking medical aid for any condition not productive of pain. Preventive medicine is practically unknown to the Negro as he is unable, for the most part, to carry over any thought from one medical problem to another. Discussing the maternal welfare program in South Carolina, Siebels [4] says "that the Negroes are contributing nothing, and that should the clinics be closed we would revert in twelve months to our former status, if the substitution for the clinic was the voluntary selection of medical supervision by the Negroes, provided this supervision was available to them."

While the Negro has little understanding of the nature and importance of maternity hygiene and care, at the same time his medical care is insufficient and inefficient. Dowling [6] points out, in an analysis of a survey of maternal mortality, that errors in judgment and technic as well as neglect on the part of the physician were 50 per cent more frequent in the care of colored mothers.

Hospital facilities for Negroes are extremely inadequate; hospitalization of many Negro obstetric patients is of an emergency character. The increase in hospital births has been more sharply pronounced for the white than for the Negro. In 1943 more than three fourths of the white but only one third of the nonwhite births occurred in hospitals. In Baltimore, according to Douglass,[4] only 85 maternity beds are available for the Negro population of over 200,000. Comparatively few Negroes have been able to enroll in voluntary hospitalization plans, and private accommodations for the financially able Negro are scarce.

Negro physicians are too few to give adequate care to the race. In 1942 the population per physician for Negroes was about five times that for all races.[7] Present day Negro medical education is unfavorable to improvement in the ratio. The lack of hospital facilities for the obstetric training of Negro physicians adds to all the other hazards of Negro maternity patients.

The relative influence of these factors which promote a high maternal mortality rate in the Negro is difficult to appraise. The authors of a recent British report on maternal mortality found that the evidence was inadequate to permit the incrimination of such conceivably influencing factors as poverty, unemployment, overcrowding and so on. Ten years ago Tandy,[8] in discussing the mortality of the Negro mother, stated: "The more favorable situation of the white race is not suggested as an optimum expectation for the Negro but rather as an early objective to be reached through improvement in environmental conditions and through health education." Underwood [4] of Mississippi writes that through proper health education and health supervision there is no reason why the Negro maternal mortality rate should not approximate the white rate. The lack of health education and adequate medical attention may well be the crux of the unfavorable position of the Negro.

The practical application of these two principles has been effectively demonstrated in Chicago by the Chicago Maternity Center and in Alabama by the Division of Maternal Health of the State Health Department in cooperation with the medical profession.

In the Chicago Maternity Center poverty has been the only prerequisite for the home delivery service; patients have received competent care under the supervision of a trained obstetrician, adequate antepartum supervision, constant medical and nursing attendance during labor and a minimum of operative interference; and good hospitals have been cooperative and available. During the first four years of this privately supported charity, according to Tucker and Benaron,[9] the mortality rate, both obstetric and nonobstetric, for the Negroes who were attended, including those referred to hospitals, was 22. This rate was less than half the rate for white, and about one third of the rate for the nonwhite in Chicago during the same period.

In Alabama, with a large rural population, maternity clinics have been set up, supervised and financed by the state. The attending clinicians are local physicians, most of whom are white, and they work under the supervision of the state obstetric consultant. The number of clinics was 120 in 1942 and 80 in 1944. In 1943 the clinic cared for 28 per cent of all the Negro maternity cases in the state. Early registration was sought to provide ample opportunity for education, elimination of infection and thorough screening to permit early and efficient hospitalization if there were complications. Most of the Negro clinic patients were delivered at home by midwives, some were delivered at home by physicians and a few received hospital care at delivery. The three years of this service, Cunningham [10] points out, have cut the state Negro maternal mortality rate in half. The clinic rate for Negroes in 1943 was 21, the nonclinic white rate 23, the nonclinic Negro rate 52.

Obstetric care has undergone an evolution in this generation, but the Negro has not participated fully in the benefits of modern obstetrics. It is not possible

6. Dowling, J. D.: Points of Interest in a Survey of Maternal Mortality, Am. J. Pub. Health **27**: 803-808, 1937.
7. Cornely, P. B.: Distribution of Negro Physicians in the United States in 1942, J. A. M. A. **124**: 826-830 (March 25) 1944.
8. Tandy, E. C.: Infant and Maternal Mortality Among Negroes, Publication 243, United States Department of Labor, Children's Bureau, 1937.
9. Tucker, B. E., and Benaron, H. B.: The Maternal Mortality of the Chicago Maternity Center, Am. J. Pub. Health **27**: 33-36, 1937.
10. Cunningham, W. A.: Maternal and Infant Mortality Rates in 1943: State of Alabama Maternity Clinic Rates, Compared with State Rates as a Whole, Am. J. Obst. & Gynec. **48**: 278-280, 1944.

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to have two systems of maternal welfare; there must be one all-inclusive health program. Health education and adequate maternity care for the Negro are amply provided for in the proposed national health program of the American Medical Association. Conservation of human life in the process of reproduction should be shared equally by all Americans. The interest and activity of the medical profession can bring this about.

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PRESENT STATUS OF GELATIN SPONGE FOR THE CONTROL OF HEMORRHAGE

With Experimental Data on Its Use for Wounds of the Great Vessels and the Heart

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The properties of an absorbable sponge composed essentially of gelatin and designed primarily for hemostasis were first reported by Correll and Wise.[1] Frantz referred to this material in a review on new methods of hemostasis which appeared shortly afterward.[2] Subsequent reports by Pilcher and Meacham,[3] Correll, Prentice and Wise[4] and Light and Prentice[5] have established its usefulness, particularly from the standpoint of the problems of hemostasis encountered by the neurosurgeon. Other hemostatic agents which had been previously developed were fibrin foam, which has been extensively used in neurosurgery as a result of the excellent work of Ingraham and Bailey[6] and others,[7] and oxidized or soluble cellulose (cellulosic acid) which has been the subject of extensive reports by Frantz and her co-workers[8] and by others.[9]

Those who have used the fibrin foam and the gelatin sponge advocated soaking in a solution of thrombin on the premise that the sponge or foam acts primarily as a vehicle or matrix for the thrombin which was considered the primary factor in the hemostatic action of these substances. Some workers have used thrombin with oxidized cellulose, although Frantz expressed the opinion that the best hemostatic effect of the cellulose is obtained in the dry state because of the slightly acid reaction of the material, i. e., the cellulosic acid.

Our interest in gelatin sponge was aroused from the standpoint of its possible use in the problems of hemostasis of the general surgeon.

Studies on the absorption of the gelatin sponge in the liver, kidneys, spleen and abdominal wall have been reported.[10] It was found that under favorable circumstances the sponge underwent absorption within about five weeks, although in the presence of a leukocytic response due to infection or damage of the tissue the sponge may become liquefied within a week or less.

In studies on the hemostatic action of the gelatin sponge[11] it was found that it would control bleeding from wounds of the liver, kidneys and spleen without the addition of thrombin or the use of sutures.

In view of the excellent hemostatic properties of the sponge which were demonstrated in these experiments, a wide range of tests was devised to evaluate its hemostatic properties under more critical conditions.

TESTS ON ANIMALS[11a]

In a series of 12 animals a substantial portion of a lobe of the liver was resected.[12] This produced rather copious bleeding. The stump of liver was "blanketed" with a sheet of gelatin sponge and held with firm pressure for five to ten minutes. This controlled the bleeding, and the sponge became adherent to the liver. There was no secondary hemorrhage in this series, although 2 of the animals died from what appeared to be biliary peritonitis. Studies of the healing of the stump of liver proved to be most interesting.

Fibroplasia developed rapidly under the sponge and in addition invaded the interstices of the sponge. It appears that the sponge gave protective cover to the healing process, as well as offering a lattice work for the growth of fibroblasts, thus giving reinforcement and structural support to the healing wound in the liver. This is a rather fundamental point, as foreign substances generally retard rather than aid the normal process of wound repair.

From the Department of Surgery, the University of Chicago School of Medicine.

Read before the Section on General Practice of Medicine at the Ninety-Fifth Annual Session of the American Medical Association, San Francisco, July 3, 1946.

1. Correll, J. T., and Wise, E. C.: Certain Properties of a New Physiologically Absorbable Sponge, Proc. Soc. Exper. Biol. & Med. **58**: 233 (March) 1945.

2. Frantz, V. K.: New Methods of Hemostasis, S. Clin. North America **25**: 338 (April) 1945.

3. Pilcher, C., and Meacham, W. F.: Absorbable Gelatin Sponge and Thrombin for Hemostasis in Neurosurgery: Experimental and Clinical Observations, Surg., Gynec. & Obst. **8**: 365 (Oct.) 1945.

4. Correll, J. T.; Prentice, H. R., and Wise, E. C.: Biologic Investigation of a New Absorbable Sponge, Surg., Gynec. & Obst. **81**: 585 (Nov.) 1945.

5. Light, R. U., and Prentice, H. R.: Gelatin Sponge: Surgical Investigation of a New Matrix Used in Conjunction with Thrombin in Hemostasis, Arch. Surg. **51**: 69 (Sept.) 1945; Surgical Investigation of a New Absorbable Sponge Derived from Gelatin for Use in Hemostasis, J. Neurosurg. **2**: 435 (Sept.) 1945. Light, R. U.: Hemostasis in Neurosurgery, ibid. **2**: 414 (Sept.) 1945.

6. Ingraham, F. D., and Bailey, O. T.: Clinical Use of Products of Human Plasma Fractionation, J. A. M. A. **126**: 680 (Nov. 11) 1944; The Use of Products Prepared from Human Fibrinogen and Human Thrombin in Neurosurgery, J. Neurosurg. **1**: 23 (Jan.) 1944. Ingraham, F. D.; Bailey, O. T., and Nulsen, F. E.: Studies on Fibrin Foam as a Hemostatic Agent in Neurosurgery, with Special Reference to Its Comparison with Muscle, ibid. **1**: 171 (May) 1944. Bailey, O. T., and Ingraham, F. D.: Chemical, Clinical and Immunologic Studies on the Products of Human Plasma Fractionation: XXI. The Use of Fibrin Foam as a Hemostatic Agent in Neurosurgery; Clinical Pathological Studies, J. Clin. Investigation **23**: 591 (July) 1944. Bailey, O. T.; Ingraham, F. D.; Swenson, O.; Lowrey, J. J., and Bering, E. A.: Human Fibrin Foam with Thrombin as a Hemostatic Agent in General Surgery, Surgery **18**: 347 (Sep.) 1945.

7. Woodhall, B.: Fibrin Foam as a Hemostatic Agent in Rehabilitation Neurosurgery, J. A. M. A. **126**: 469 (Oct. 21) 1944.

8. Frantz, V. K.: Absorbable Cotton, Paper and Gauze (Oxidized Cellulose), Ann. Surg. **118**: 116 (July) 1943. Frantz, V. K.; Clarke, H. T., and Lattes, R.: Hemostasis with Absorbable Gauze (Oxidized Cellulose), ibid. **120**: 181 (Aug.) 1944. Frantz, V. K., and Lattes, R.: Oxidized Cellulose—Absorbable Gauze, J. A. M. A. **129**: 798 (Nov. 17) 1945. Lattes, R., and Frantz, V. K.: Absorbable Sponge Tests, Ann. Surg. **121**: 894 (June) 1945.

(Footnote 9 in next column)

9. Cronkite, E. P.; Deaver, J. M., and Lozner, E. L.: Experiences with the Use of Thrombin With and Without Soluble Cellulose for Local Hemostasis, War Med. **5**: 80 (Feb.) 1944. Uihlein, A.; Clagett, O. T.; Osterberg, A. E., and Bennett, W. A.: Absorbable Oxidized Cellulose with Thrombin as a Hemostatic Agent in Surgical Procedures, Surg., Gynec. & Obst. **80**: 470 (May) 1945. Uihlein, A.; Clagett, O. T., and Osterberg, A. E.: The Use of Oxidized Cellulose for Hemostasis in Surgical Procedures: Preliminary Report, Proc. Staff Meet., Mayo Clin. **20**: 29 (Jan. 24) 1945. Putnam, T. J.: The Use of Thrombin on Soluble Cellulose in Neurosurgery: Preliminary Note, Ann., Surg. **118**: 127 (July) 1943.

10. Jenkins, H. P., and Clarke, J. S.: Gelatin Sponge, A New Hemostatic Substance: Studies on Absorbability, Arch. Surg. **51**: 253 (Nov.-Dec.) 1945.

11. Jenkins, H. P.; Janda, R., and Clarke, J. S.: Clinical and Experimental Observations on the Use of Gelatin Sponge or Foam, Surgery **20**: 124 (July) 1946.

11a. The gelatin sponge used in this experimental and clinical study was provided in sheets measuring 3½ inches by 4¾ inches by ½ inch (8.9 cm. by 12.1 cm. by 1.3 cm.) which had been sterilized by heat and packaged in sealed glass jars by the manufacturer. These large size pieces of gelatin sponge could be compressed to a thickness of 1/16 inch (0.21 cm.).

The gelatin sponge which was provided in smaller sizes measuring 2¼ inches by ¾ inch by ¼ inch (5.7 by 1.9 by 0.64 cm.) was found to be too small to handle bleeding of any magnitude.

12. (*a*) Janda, R.: Observations on the Use of Gelatin Sponge, Surgery **20**: 299 (Aug.) 1946. (*b*) Jenkins, H. P., and Janda, R.: Studies on the Use of Gelatin Sponge or Foam as a Hemostatic Agent in Experimental Liver Resections and Injuries to Large Veins, Ann. Surg., to be published. Tr. Am. S. A., to be published.

In another series of 27 experiments[12b] in which wounds were made in the vena cava it was found that the massive hemorrhage could be controlled by a "patch" of gelatin sponge applied by pressure of the fingers for two to three minutes over the rent in the vein (figs. 1, 2, 3 and 6). When pressure was removed

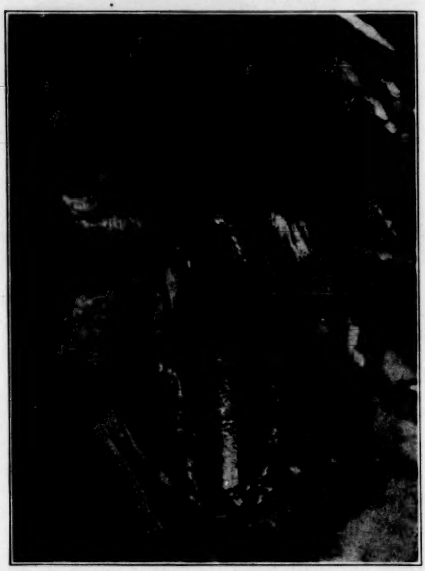

Fig. 1.—Showing hemorrhage from wound of vena cava.

the patch remained adherent to the wall of the vein and controlled the bleeding completely except in 2 animals which died from uncontrolled hemorrhage.

In this series of animals there was secondary hemorrhage in only 1 instance in which a patch applied to the superior vena cava apparently became dislodged after the chest had been closed. The patch usually becomes sufficiently adherent within twenty to thirty minutes so that danger of dislodgment is lessened. It was generally found desirable, however, to hold the sponge in place by closing a layer of tissue such as pleura or peritoneum over the patch. After twelve hours the patch becomes rather firmly adherent to the wall of the vein. In reviewing the condition of the vein subsequently at varying periods of time it was found that the sponge firmly plugged the rent in the vein and that an endothelial layer soon covered the sponge. This endothelialization of the sponge was observed as early as four days in some instances. In a few of the specimens a small clot was observed to be adherent to the sponge, occluding the defect in the vein. Only one large mural thrombus was observed; however, in the clinical application of this phase of the work this point should be taken into consideration, and it would probably be wise to use the anticoagulants from about twelve hours to ten days. The defect in the wall of the vein was found to heal over within about two weeks by an endothelialized scar. The sponge was absorbed completely in about five weeks.

The next phase of this experimental study was to determine the hemostatic effect of gelatin sponge on arterial hemorrhage.[13] In a series of 22 dogs, incisions were made in the abdominal aorta with a scalpel after the vessel above and below had been compressed with rubber-covered clamps. In some of the experiments through and through wounds were made with the scalpel. When the clamps were released the bleeding was extensive. The clamps were reapplied, and a cuff of dry compressed gelatin sponge was wrapped about the vessel and secured in place by interrupted sutures of chromic catgut. When the clamps were again released the bleeding was completely controlled and the blood flow through the cuff restored. In five experiments there were blowouts after four to six days, in two instances due to the friability of the sponge. This technic was then modified by wrapping the cuff of sponge by a sheath of chromicized catgut and then securing the sheath by four to five interrupted chromic catgut sutures. With this technic it was possible to control hemorrhage, restore the flow of blood and prevent subsequent blowouts in 14 out of 16 animals. One blowout occurred where a plain catgut sheath was used.

A propagating thrombus is another of the hazards of any type of arterial repair, and this was observed in 1 instance.

The last phase of the experimental work has been to determine the hemostatic action of the gelatin sponge on wounds of the heart.[14] In a series of 14 dogs wounds were made with a scalpel or scissors which were often large enough to admit the finger into the ventricle. A patch of dry compressed gelatin sponge was applied

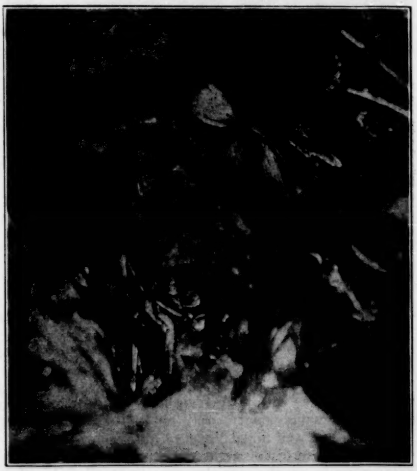

Fig. 2.—Showing control of hemorrhage by patch of gelatin sponge.

over the wound and held in place by gentle pressure of the fingers synchronized with the heart beat (figs. 4, 5, 7 and 8). Bleeding was completely controlled in five

13. Jenkins, H. P.; Senz, E. H.; Owen, H. W., and Jampolis, R. W.: Control of Hemorrhage from Wounds of Arteries by a Gelatin Sponge "Cuff" and Chronic Catgut Sheath, a New Experimental Method, to be published.

14. Jenkins, H. P.; Owen, H. W.; Senz, E. H., and Jampolis, R. W.: Control of Hemorrhage from Wounds of the Heart by the Gelatin Sponge "Patch" Technique, a New Experimental Method, to be published.

to ten minutes in most instances, although it required as long as thirteen minutes in 1 experiment. Within twenty to thirty minutes the patch was usually quite adherent to the heart; when attempts were made to remove the patch the sponge would not come away in one piece but would tend to fragment before it could be dislodged. These animals died or were killed within two to one hundred and four days. No secondary hemorrhage or blowout was observed. In addition, three acute experiments were performed to demonstrate the control of the hemorrhage by this patch technic. In many of the experiments the patch was removed and a fresh patch applied several times. In 6 other animals ventricular fibrillation developed as soon as the pericardium was opened or the wound made.

At autopsy the patch was found to be firmly adherent to the heart and slightly adherent to the overlying peri-

Fig. 3.—Showing inferior vena cava (intrathoracic portion) thirteen days after repair of wound with patch of gelatin sponge. The lungs were lightly adherent to the sponge, which was "incorporated" in the wall of the vena cava.

cardium. There was no evidence of blood or exudate in the pericardial cavity, and no obliteration of the pericardial sac was noted.

In another series of eight experiments the bleeding from wounds of the auricles was controlled by the gelatin sponge patch technic, which required some modification from that used for controlling hemorrhage from the ventricles.[15] In most of these experiments a small portion of the auricle was excised. Two of these animals died within twenty-four hours, 1 from shock, the other from pneumothorax. The other 6 animals were killed after seven to seventy-seven days.

15. Jampolis, R. W., and Jenkins, H. P.: Control of Hemorrhage from the Cardiac Auricles by Gelatin Sponge, an Experimental Study, to be published.

USE IN CLINICAL CASES AND POSSIBLE CLINICAL APPLICATIONS

In addition to these experimental tests the gelatin sponge has been used in 140 clinical cases in which there was some problem of hemostasis at operation. It has been useful for control of bleeding from the

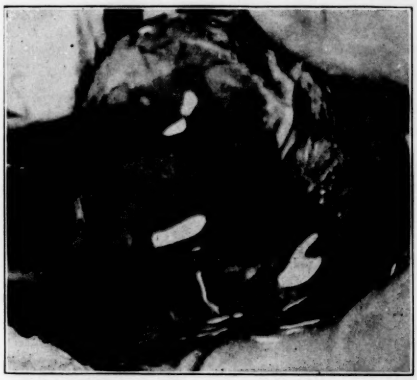

Fig. 4.—Showing wound of heart (left ventricle), with scissors inserted into the wound.

under surface of the liver after cholecystectomy and from biopsy wounds of the liver. After removal of the thyroid some residual bleeding in regions near the recurrent laryngeal nerves was controlled with the sponge, a method which eliminated the danger of injuring the nerves. In freeing abdominal adhesions where there may be multitudes of bleeding points, the sponge was found useful. In thoracic surgery it has

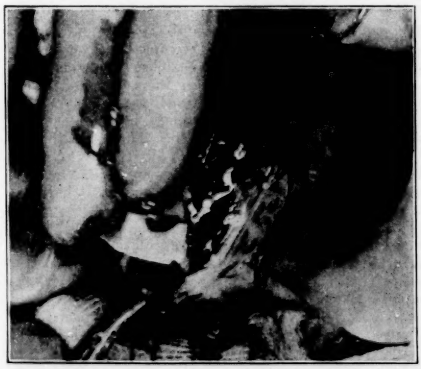

Fig. 5.—Showing patch of gelatin sponge applied to wound of the heart with pressure of fingers (dry compressed sponge was used).

been found helpful for obtaining hemostasis where thickened pleura has been excised or mediastinal tumors removed. When tissue was taken from abdominal tumors for biopsy some rather troublesome bleeding was controlled with the sponge.

The gelatin sponge has also been used for control of bleeding after removal of skin grafts or granulation

tissue. However, it usually becomes liquefied within one to four days under these circumstances and as a dressing for donor areas is not especially satisfactory unless the bleeding has been rather troublesome. The sponge may also be used as a pack after rectal operations, where it undergoes liquefaction within a few days and thus does not require removal. One of the more interesting uses for the gelatin sponge has been for packing the nose in cases of recurring epistaxis. It has also been found useful for packing tooth sockets after extraction, where one may sometimes encounter bleeding which is annoying.

These clinical tests represent only the relatively minor problems of hemostasis. The real problems in hemostasis in clinical surgery remain to be tested, along the lines suggested in the experimental procedures. It should be emphasized, however, that gelatin sponge or any other hemostatic agent is not a substitute for ligature or suture in the ordinary routine technics of operative surgery. The particular field of usefulness for these new materials is where ligature or suture is not adequate or feasible.

In view of the excellent hemostatic properties of the gelatin sponge as demonstrated by the experimental tests, it should be useful as a first aid dressing for surface wounds until the patient can be cared for in an adequately equipped operating room. There are numerous instances of extensive losses of blood which might be prevented with this type of first aid dressing.

Fig. 6.—Showing vena cava forty-eight days after injury and repair with patch of gelatin sponge. Complete absorption of the patch has occurred, and the wound in the vein is healed by an endothelialized scar.

It is suggested that a large pad of compressed gelatin sponge be provided with a bandage to maintain pressure and to hold the sponge in place, to meet such a situation.

In operative surgery one of the most trying experiences which a surgeon may have is suddenly to encounter a large venous hemorrhage during the course of mobilizing an organ or tumor. There may be times when the surgeon is unable to identify the bleeding because of the lack of exposure or the magnitude of the hemorrhage, and he may be in the position of blindly applying hemostats in an attempt to control the bleeding. Under such circumstances one may damage adjacent vital structures or may be unable completely to control the hemorrhage. Gelatin sponge or the other hemostatic agents might be especially appropriate for a situation such as this. When, as is ordinarily done, gauze packs are used to control such massive venous hemorrhage it is necessary, of course, to remove the pack subsequently, and one may encounter secondary hemorrhage when this is done. When absorbable hemostatic agents are used there is no need to remove these materials subsequently, and thus the danger of secondary hemorrhage is obviated.

In the extensive dissections required in the more radical resections which are being done for abdominal malignant growths the use of the hemostatic agents may help to minimize loss of blood. Thus it may be feasible for the average well trained surgeon to perform such operations in circumstances in which there may not be unlimited amounts of whole blood available to replace the blood which may be lost in such procedures. The importance of blood transfusions when there has been extensive loss of blood during operation

Fig. 7.—Showing patch of gelatin sponge adherent to the heart and controlling hemorrhage from the wound.

must not be underestimated. However, conserving blood with the aid of hemostatic agents holds much promise.

In wounds of parenchymatous organs such as the liver the gelatin sponge should be especially useful in controlling hemorrhage. In resections of tumors of the liver it may have a place as a supplement to mattress

Fig. 8.—Showing heart twelve days after repair of wound of the left ventricle with patch of gelatin sponge.

sutures. Some points in technic may have to be worked out as yet before the sponge can be used satisfactorily as the principal means of controlling hemorrhage in resections of the liver. There may be a place for a tougher and stronger spongy material which could be held in place by sutures to meet this particular problem. One of the most important points in obtaining hemostasis in the liver is an immediate firm apposition of

the blood-soaked sponge to the bleeding surface, because the clotting of blood in the sponge before apposition is obtained negates the adhesive properties of the sponge, which are apparently due to the fibrin liberated in the clot formation. Some type of holder may have to be devised to aid in getting good apposition of the sponge to the raw bleeding surface of the liver after resection.

In operations on the bile ducts or in resections of the pancreas one may injure the portal vein. Under such circumstances it may not be feasible to perform a venisuture, and ligation, of course, would be most undesirable. In a place such as this the gelatin sponge "patch" technic may offer an alternative which would be most desirable. The neurosurgeons have used muscle, fibrin foam and gelatin sponge by the "patch" technic for controlling hemorrhages from the dural sinuses and have found this procedure indispensable to their standard technic. It is possible that the general surgeon may find this of value where there is damage to a vein which one may not choose to ligate or which may not be accessible for a satisfactory venisuture. Even if a venisuture is performed the patch of gelatin sponge may serve a useful purpose as a secondary line of defense.

In regard to wounds involving arteries where the blood flow is necessary for the viability of a limb or organ the "cuff" technic may offer some possibility for restoring vital circulation. Wherever it is feasible to perform an arterial suture it would of course be preferable, but there may be situations in which the cuff of gelatin sponge supported by a chromic catgut sheath can be utilized to maintain the arterial circulation. If arterial suture is done then the cuff and absorbable sheath may be used to supplement the suture line as a secondary line of defense against subsequent blowouts, which is of course one of the hazards of any arterial suture.

Another possible clinical application of the cuff and sheath is as a reinforcement to arterial anastomosis, which is being done in an increasing number of instances in some of the newer operations which are being developed.

In cardiac wounds the use of the sponge to stop the hemorrhage so that sutures can subsequently be placed offers one constructive point. Furthermore, a suture line can be reinforced with gelatin sponge, making it possible to tie up the sutures with less tension, thereby lessening the danger of ischemia of the muscle from tight sutures or secondary hemorrhage and subsequent tamponade from too loose a suture line. Furthermore, in small wounds, or wounds adjacent to a coronary vessel, where a suture may occlude a major branch, or wounds of the auricles, there may be a place for the gelatin sponge patch alone.

In regard to the use of gelatin sponge as a supplement or alternate to suture of traumatic wounds of the heart it would be advisable to await the evaluation of this experimental method by those who have had the widest clinical experience in this field, such as Elkin, Bigger, Blalock, Beck, Griswold, Singleton and Linder, as their work has been largely responsible for the present day method of treatment of cardiac wounds. One of the most interesting possibilities of this experimental method is that it may make intracardiac surgery more feasible, such as operations for stenosing lesions of the valves, by offering a more satisfactory means of controlling hemorrhage.

One should be extremely guarded in making clinical recommendations on the use of a new substance such as gelatin sponge or other hemostatic agents. It would be most unfortunate to have such materials misused and to have discredit brought on a valuable new agent in surgery.

There are technical points in applying the sponge which require some actual experience before one can obtain satisfactory results in controlling any severe hemorrhage. The importance of this should not be underestimated, as control of hemorrhage by the hemostatic agents may require more skill and training than is necessary to apply a hemostat adeptly or to tie a ligature. Furthermore, there are some limitations to the use of these hemostatic agents, particularly from the standpoint of the bulk of the material used. It is a fundamental principle in surgery to minimize the amount of foreign material used in a wound, and this applies to the hemostatic agents as well as to suture material or anything else. It is important, therefore, to use as small a piece and especially as thin a piece of gelatin sponge as is compatible with obtaining satisfactory hemostasis. In the presence of contamination or infection the bulk of the hemostatic agent is especially important because the gelatin sponge may become rapidly liquefied under such circumstances and may offer a culture medium which may influence the development of infection.

MODE OF ACTION OF THE GELATIN SPONGE

In regard to the mode of action of the gelatin sponge in obtaining hemostasis it would appear that the most substantial factor in the control of bleeding in this study has been the gelatin sponge itself, as nearly all the experimental and clinical observations described were made without the addition of thrombin to the sponge. Control studies using sponge rubber, Du Pont cellulose sponge and sea sponge demonstrated a hemostatic action on wounds of the vena cava and the heart which was similar to that of gelatin sponge, although it was not so satisfactory and did not adhere so firmly to the wound. The hemostatic action of thrombin is of course incontestible. The extent to which thrombin may enhance the hemostatic effect of substances such as gelatin sponge was not at all clearcut in our experience.

The clotting effect of the sponge may be due to the liberation of thromboplastin when the platelets in the blood entering the sponge become damaged by contact with the walls of the myriads of interstices, which present a rather large surface area. The thromboplastin thus liberated along with the prothrombin and calcium in the blood may then produce enough thrombin to initiate the clotting mechanism. Thus one may be dealing with a physiologic formation of thrombin in the sponge which is adequate to produce a clot by its action on the fibrinogen of the blood without the addition of prepared thrombin.

In conditions in which there is a deficiency of prothrombin or platelets it would obviously be desirable to have prepared thrombin in the sponge to obtain satisfactory hemostasis. Until such time as more data are available on the extent to which thrombin may appreciably enhance the hemostatic effect of gelatin sponge in the absence of deficiency in the normal clotting mechanism it is recommended that thrombin be used with gelatin sponge in clinical cases.

The important and fundamental aspect of this work is the spongy physical properties of the gelatin sponge, which hastens the formation of a clot when the blood enters its interstices and then gives structural support to the clot. Furthermore, this "reinforced" clot becomes adherent to the wound because of liberation of fibrin during the clotting process. In addition, there is the role of the sponge in giving protection and support to the process of wound repair by permitting fibroplasia to develop under the cover of the adherent sponge as well as into the interstices of the sponge. And finally the sponge undergoes absorption after it has served its purpose of aiding two of the most important protective mechanisms of the body, the clotting of blood and the reparative process.

It is entirely possible that other spongy substances may be developed which would have some advantage from the standpoint of stronger and tougher physical properties which would be helpful in some of the problems of hemostasis, such as for work on the liver, the arteries or the heart, and would still retain the absorptive and protective qualities found in gelatin sponge.

In view of the possibilities of the development of a number of hemostatic agents there should obviously be some attempt made to obtain standardization of the properties of absorbability and the controls of sterility which would protect the surgeon and the patient. It would be appropriate for the Council on Pharmacy and Chemistry of the American Medical Association to make some recommendations on this problem. From our studies there appears to be a place for three grades of material from the standpoint of properties of absorbability: (*a*) a type which is rapidly absorbed (one to three weeks); (*b*) a type which is absorbed in a medium length of time, such as the present type of gelatin sponge (three to six weeks), and (*c*) a type which is absorbed slowly, where there may be a greater degree of resistance to the action of leukocytes (six weeks to six months).

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SUMMARY

Experimental data on the use of gelatin sponge for control of hemorrhage from the liver and from the wounds of the great vessels and the heart have been presented. Clinical observations have been made on 140 cases in which the gelatin sponge has been used for hemostasis as a supplement to ligature or suture.

CONCLUSIONS

The absorbable hemostatic agents are a contribution to the practice of medicine and especially to surgery. Gelatin sponge has been studied experimentally and clinically and found to have desirable properties from the standpoint of absorption and hemostatic action, as well as some limitations. The gelatin sponge is a valuable addition to the field of the absorbable hemostatic agents.

These materials will undoubtedly contribute to a greater degree of safety by conserving blood loss, not only in the first aid treatment of surface wounds, where hemorrhage may be the principal immediate problem, but also in operative procedures generally.

There is no place for controversy with respect to use of the hemostatic agents in place of ligature or suture when these would ordinarily suffice. The principal field of usefulness of the hemostatic agents is where ligature or suture is not adequate, feasible or desirable, or as a supplement to suture.

With the aid of hemostatic materials now available as well as with those which may yet be developed, there may be a widening of the scope of operative surgery, especially in the field of vascular and cardiac surgery and in the operative attack on malignant tumors.

ABSTRACT OF DISCUSSION

DR. VIRGINIA KNEELAND FRANTZ, New York: It has been a matter of great interest to observe the origin and development of a number of absorbable packings since the appearance of the pioneer in the field, fibrin foam, at Harvard University. There are now three such substances which have been the subject of extensive clinical as well as animal experimentation. They are fibrin foam, oxidized cellulose and gelatin sponge. All these materials are nonirritating and absorb completely in the tissues in varying lengths of time. With more widespread clinical trial we await the verdict of surgeons and of general practitioners, who still see a good deal of bleeding, as to the relative merits of each of these agents. The particular technics which control hemorrhage from the heart and great vessels which Dr. Jenkins presented are dramatic and somewhat terrifying. He has been wisely cautious in extending the application to exactly similar technics in human surgery. There is no doubt, however, that the hemostatic absorbable pack is here to stay for the control of bleeding—often major arterial bleeding—which cannot be handled by other means, and for more radical surgical procedures than were formerly possible, and, as Dr. Jenkins pointed out, for the first aid, first treatment of the severe hemorrhage before definitive surgery can be achieved. Clearly, the experimental studies of Dr. Jenkins are designed to give the surgeon courage in the face of what could be disaster.

DR. HILGER PERRY JENKINS, Chicago: The principal thing we have to present is the fact that these new hemostatic agents, fibrin foam, oxidized cellulose and gelatin sponge, will be helpful in saving lives by conserving loss of blood. We do not know all the clinical applications as yet of the experimental studies which have been conducted. It is only by the wider use of these hemostatic agents that we may ultimately have the answer to some of these problems. Extreme care should be used in exploring the clinical value of these new materials, and it should be emphasized again that they are not designed as a substitute for ligation and suture when this would ordinarily suffice.

Heterogeneous Mesenchymal Cells.—The reticuloendothelial system, as originally conceived by Aschoff, unites a multitude of heterogeneous mesenchymal cells widely dispersed throughout the animal body according to one functional similarity—the ability to store colloidal dyes in granular form. The individual members of the system, such as the reticular and endothelial cells of lymph nodes, spleen and bone marrow, the stellate cells of the liver and the mononuclear, ameboid cells of the loose connective tissue (clasmatocytes), had been identified by histologists many years before but their biologic relationship had not been realized on morphologic grounds. Yet certain of their functional abilities such as phagocytosis of foreign material and the faculty of fiber formation had been fully recognized before and their potentialities of progressive differentiation had been conjectured at by investigations of histologists, embryologists and pathologists. While in Aschoff's original conception the storage ability of the reticuloendothelial system was singled out, subsequent investigations disclosed additional functional aspects. The fundamental feature of the system is its reactivity to a variety of stimuli which provoke cell proliferation and differentiation in contrast to other cells of mesenchymal origin which represent final developmental stages. The cells of the reticuloendothelial system of the adult organism have retained part of their embryonal potencies which can be reawakened by adequate stimulation. The main lines of differentiation are the histiocytic-macrophagic, the hematic, endothelial and fibroblastic. —Klemperer, Paul: The Reticulo-Endothelial System, *Marquette Medical Review*, August 1946.

SYMPATHECTOMY FOR REFLEX SYMPATHETIC DYSTROPHY

Report of Twenty-Nine Cases

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Reflex sympathetic dystrophy or causalgia is a painful syndrome usually occurring after trauma to a limb, characterized by its own peculiar type of burning, diffuse pain, trigger points and manifestations of sympathetic stimulation such as, subjectively, a cold or hot limb and, objectively, rubor, pallor, or both, and swelling. There is often atrophy of the bone, characteristically mottled owing to spasm of the nutrient arteries, and sometimes atrophy of the skin and muscle. There may even be immobility of a joint, scleroderma and Dupuytren's contracture.

An attractive theory of the mechanism of this pain is adopted from De Nó [1] by Livingston [2] in his monograph on "Pain Mechanisms." I have slightly modified this conception in figure 1. A prolonged bombardment

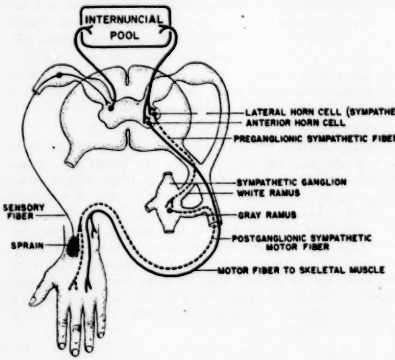

Fig. 1.—Diagram of de Nó's theory of the internuncial pool. (Adapted from de Nó.[1])

of pain impulses sets up a vicious circle of reflexes spreading through a pool of many neuron connections upward, downward and even across the spinal cord, and perhaps reaching as high as the thalamus itself. Because of the summation principle of nervous impulses and of the "facilitation" of conductivity within the spinal cord as described by Porter and Taylor,[3] there is kept alive within such a pool a constant circling of activity across the synapses involved. Some of these synapses include the sympathetic motor neuron cells in the lateral horn, controlling vasomotor tone and the sweat glands. Spasm in the arteriolar and venule end of the capillary loops raises filtration pressure, and edema and swelling result. Cyanosis and anoxemia increase capillary permeability and filtration, further augmenting edema. Other synapses involved may be the anterior motor horn cells, giving rise to cramps and spasms of the skeletal muscles. Augmented stimuli to pain also flow out of the pool, traveling up the thalamic tract. Depending on the extent of the pool, the phenomena of pain and sympathetic disturbances are observed a long distance from the injured area of the body and occasionally even spread to the contralateral side.

De Takats [4] has recently reviewed 54 cases of causalgic states, in which he recognizes three sensory levels, peripheral, spinal and cortical, based on lesions of the first, second and third neurons, and advocates direct treatment to the affected neuron. With few exceptions my colleagues and I have employed therapeutic attack on the second neuron, namely the sympathetic pathway, either by sympathetic nerve block with metycaine hydrochloride or by sympathectomy. It is our conviction that the majority of these patients can be relieved by these two methods of attack. Treatment of the trigger points alone is not satisfactory in our experience in dealing with severe causalgic states and has been used chiefly as an adjunct to sympathetic nerve block with metycaine hydrochloride and sympathectomy.

In a recent review of 57 patients with reflex sympathetic dystrophy at the Lahey Clinic, 12 were treated by sympathetic nerve block alone, in 11 of whom there was satisfactory to complete relief. Twenty-nine others submitted to sympathectomy after sympathetic nerve block with procaine hydrochloride demonstrated only temporary relief in all but 2. It is important to note that these 2 patients who received no relief of pain from sympathetic nerve block were not relieved of their pain after sympathectomy, although sweating, rubor, pallor and swelling disappeared.

We have resorted to sympathectomy in many of these patients after trying one block, rather than waiting for results from a series of blocks and injections into trigger points because of the severity of most of these patients' syndromes, their prolonged suffering, the distance from which they came to us, for quicker rehabilitation to normal economic status and because in the hands of Dr. Poppen,[5] of our neurosurgical staff, sympathectomy is an operation attended by no risk of mortality and only two weeks' hospitalization.

The results of sympathectomy with regard to pain are given in table 1. Ten patients had complete relief of pain for follow-up periods of one month to two years. One patient who was followed up for less than one month had complete relief. Eleven patients had 50 to 90 per cent relief for periods ranging from one month to two and one-fourth years. Seven patients had no, or but little, relief of pain.

A review of the 7 failures (table 2) seems of more value in the study of this syndrome than a detailed report of the success of what is now accepted as a standard treatment. Two glaring pitfalls appear: (1) 2 patients who were not relieved of pain on block were not helped whatsoever by sympathectomy, at least with regard to their pain; (2) 2 patients not included in this series did not have sympathectomy performed because false blocks temporarily relieved their pain after true blocks had produced complete, dramatic relief.

From the Department of Internal Medicine, The Lahey Clinic.
Read before the Section on Nervous and Mental Diseases at the Ninety-Fifth Annual Session of the American Medical Association, San Francisco, July 3, 1946.

1. Lorente de Nó, R.: Analysis of the Activity of the Chains of Internuncial Neurons, J. Neurophysiol. **1**: 207-244 (May) 1938.
2. Livingston, W. K.: Pain Mechanisms: A Physiological Interpretation of Causalgia and Its Related States, New York, The Macmillan Company, 1943.
3. Porter, E. L., and Taylor, A. N.: Facilitation of Flexion Reflex in Relation to Pain After Nerve Injuries (Causalgia), J. Neurophysiol. **8**: 289-295 (Sept.) 1945.
4. de Takats, G.: Causalgia States in Peace and War, J. A. M. A. **128**: 699-704 (July 7) 1945.
5. Five of these patients were operated on by Dr. Ralph Adams of the general surgical staff.

The psychosomatic background of patients with reflex sympathetic dystrophy is like that of patients with Raynaud's disease and hysteria, and "litigation neurosis" must be carefully appraised in these cases with the help of the psychiatrist.

One of the 2 patients who did not receive relief from either block or sympathectomy had sustained a fracture of the right ankle three years previously. Her pain was severe, of the causalgia type; trigger points, rubor and swelling were present. For three months following sympathectomy she was considerably better and was able to abandon crutches. At a follow-up examination nine months after operation, however, her pain was as severe as ever, although a good effect of the sympathectomy was evident and swelling was no longer present. Electric skin resistance test showed regeneration of sympathetic nerves, which must have recurred within three months. Parenthetically, a study by Dr. Richter [6] at the Lahey Clinic of such sympathetic regeneration after sympathectomy for hypertension has been most illuminating and constitutes a challenge to the present technic of sympathectomy. On this patient it was necessary to perform neurectomy of the distal peroneal and sural nerves, which finally gave her relief of pain. We felt that this procedure was preferable to attack on the spinal neuron (by cordotomy).

The second patient who received no relief of causalgic pain one year after either block or sympathectomy had suffered a laceration of the hand and had two repair operations one year previously. She had severe causalgic pain. Trigger points, pallor, sweating and atrophy of muscle and bone were present. It was decided that in a patient with her psychosomatic background a third resection of the scar on the wrist with necessary pedicle graft would be inadvisable. Previous local operations had only aggravated her pain, a fact emphasized by Livingston. Since her case is still in litigation, we have advised immediate settlement and have seriously proposed a visit to a well known religious shrine before such radical measures as attack on the spinal neuron (thalamic tract resection) or at the cerebral level (lobotomy or cortical resection) are considered.

The third patient who had no relief following sympathectomy had his operation done elsewhere, and a diagnostic block, advised by us, was not carried out first.

A fourth patient we feel needs scalenectomy for further relief.

The fifth patient who received absolutely no relief from sympathectomy suffered a peculiar pain in the left arm, axilla and left side of the chest, often provoked by effort but more often coming on while he was lying down. Successful treatment of subacromial bursitis on the left side gave him no permanent relief. Three paravertebral sympathetic nerve blocks with metycaine hydrochloride and two trigger blocks gave him complete but temporary relief. Upper thoracic sympathectomy on the left side afforded him relief for only two or three weeks, and two months later he reported full return of angina of effort.

For 1 of 2 patients who received only about 25 per cent relief following sympathectomy an additional exploration of the radial nerve is advised, and the other needs continued physical therapy for pronated feet.

6. Richter, C. P.: Personal communication to the author.

Two unusual cases of reflex sympathetic dystrophy in which there was successful relief of symptoms by sympathectomy are reported.

REPORT OF CASES

CASE 1.—A man aged 64 was admitted to the New England Deaconess Hospital Aug. 18, 1945, with pain and swelling of the left hand and forearm of five months' duration. A year before admittance itching and discomfort of his nose had developed, with several small ulcers inside the nose. When these failed to heal, a Wassermann test was made, results of which were reported to be "questionably positive." He was then given an injection of a bismuth compound into the left cubital vein. As the injection was being given, the patient jumped and some of the bismuth compound was injected outside the vein. Shortly thereafter a lump about 4 by 8 cm. formed on the arm. Two weeks later a spot on the left thumb became painful, tender, red to purple and hot. This spread to involve the entire hand and wrist. At times the fingers became pale and cold, and the nail beds became white. A rash was present for three weeks on the dorsum of the left hand.

Examination showed the wrist and fingers of the left hand to be slightly swollen. The skin was smooth, pink and atrophic.

TABLE 1.—*Results of Sympathectomy on Pain in Twenty-Nine Patients*

100% relief 1 month to 2 years	10
100% relief; follow-up less than 1 month	1
90-50% relief 1 month to 2¼ years	11
25-0% relief more than 1 month	7

TABLE 2.—*Analysis of Poor Results from Sympathectomy*

No relief	5
Diagnostic block gave no relief	2
Diagnostic block not done at first	1
Scalenectomy needed	1
Angina of effort returned	1
25 per cent relief only	2
Exploration of radial nerve advised	1
Continued physical therapy for pronated feet advised	1

There were loss of wrinkles and pitted nails. Ulnar deviation of the wrist was present. The metatarsal phalangeal joints were slightly flexed. The interphalangeal joints of the four fingers were immovable. There was atrophy of the left shoulder girdle. Pigmentation of the skin, with scaling, was noted over the left pectoral and left supraclavicular regions. There was partial immobility of the left shoulder, especially with respect to external rotation. A diagnosis was made of reflex sympathetic dystrophy, with secondary atrophy of the bone, muscles and joints and immobility of the finger joints.

Sympathetic block of the cervical chain on the left side was carried out on August 22, with the following results: 1. Shortly after the block, the skin of the left hand became redder. One hour later, when the hand was being held in the dependent position, it became cyanotic. 2. There was definitely decreased pain in the fingers, hand and wrist, with abolition of pain at the trigger point at the base of the left thumb. 3. There was increased passive mobility of all the finger joints and the wrist. 4. Cutaneous temperature readings taken on the dorsum of the hand, thumb and forefinger showed a definite increase, a total rise in one hour of 6.3 F. Because of long disuse of the extremity, the patient had a "frozen left shoulder." The orthopedist manipulated the shoulder under local anesthesia, breaking down fibrous adhesions. Four days later cervical sympathectomy on the left side was done by the anterior approach. On the fourth postoperative day bron-

chial pneumonia developed, which subsided on sulfathiazole therapy. On discharge the patient was given instructions to use melted paraffin to the hand and given directions as to special exercises.

Nine months after discharge some scleroderma was still present over the second and third fingers and palmar contraction persisted. The left shoulder had full motion. The fingers were more mobile, all pain had disappeared, and there was no more atrophy of the muscles of the chest or shoulder and the pigmentation and scaling of the skin over the left pectoral region were entirely gone. Recalcification had occurred in the humerus and bones of the hand and wrist (fig. 2).

CASE 2.—A woman aged 33 entered the New England Baptist Hospital on May 10, 1945, complaining of excruciating pain in the right arm, shoulder and breast, of five years' duration. Six weeks before the onset of this pain she had fallen on the right elbow, and the roentgenologist reported that she had sustained a "chip fracture of the olecranon process." The trouble began as a painful swelling of the right forearm, diagnosed as neuritis. The tonsils and appendix were removed as possible foci of infection, without relief. Next, the arm itself was explored and a biopsy specimen was taken. The pathologic report was periarteritis nodosa.

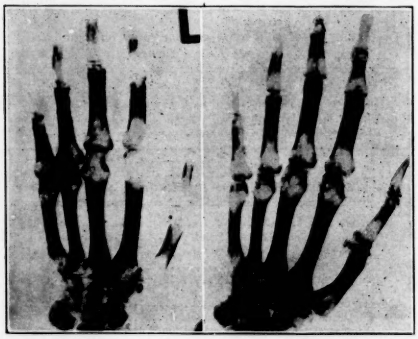

Fig. 2 (case 1).—Roentgenograms of hands; left, preoperative; right, nine months after sympathectomy, showing recalcification of the bones of the hands.

In 1942 a nerve block proved ineffective. In 1943 relief was obtained after a scalenectomy, but there was a return of symptoms in 1944, attended by severe epistaxis.

Examination revealed a Raynaud-like syndrome, with trigger points over the scar on the right arm, the olecranon process, the posterior and medial surface of the upper part of the forearm, the back of the right shoulder and the right posterior aspect of the neck about the level of the second and third cervical vertebrae. Another trigger point was present in the lateral second interspace on the right. Exposure to cold produced whiteness of the hand and forearm, followed by blueness. Extreme cold caused complete numbness of the right little finger and proximal interphalangeal joint, the latter becoming black in color. The patient stated that when the pain started the right shoulder, breast and arm felt cold, became pale and then swelled, after which the hand became white and then blue. This phenomenon was observed during the examination. There was a palpable difference in temperature of the upper part of the arms. Sweating of the right axilla and hand was noted. There was atrophy of the tips of the fingers in both hands, more marked on the right, with tapering especially of the tip of the right little finger. The right radial pulse during a paroxysm of pain was barely perceptible. It was thought that her episodes of pain in the left arm might be the contralateral effect sometimes seen in causalgia.

On May 14, 1945, the patient was put out on a porch, where the air was cooler. When she was turned on her left side and the right arm and shoulder were exposed, the arm became painful and was mottled and cyanotic from the shoulder down to and including the hand. A paravertebral block with metycaine hydrochloride was done of the seventh cervical and first and second thoracic segments. Almost immediately after the metycaine hydrochloride was injected the patient said that her arm felt warmer and the pain was diminished. Fifteen minutes after the injection was completed, the arm was pink and warm. She said there was no pain whatsoever by this time. The trigger areas had disappeared.

With this evidence thoracic sympathectomy on the right side was performed, including the thoracic second and third sympathetic ganglions. After sympathectomy, the pain on the right disappeared and the flushing and sweating phenomena abated.

About a week after sympathectomy on the right side the patient began to complain bitterly of similar symptoms on the left side. A block of the upper thoracic sympathetic nerves caused temporary disappearance of this pain. A thoracic sympathectomy was therefore done on the left side, including the second and third thoracic segments. The patient was discharged on the twenty-fifth hospital day asymptomatic.

Four months after discharge from the hospital, however, the pain and sweating returned in an area lower on her chest than the previous symptoms. Sympathectomy was now extended in two stages down through the second lumbar segment. When the patient was discharged from the hospital two weeks later all causalgic pain had disappeared.

SUMMARY AND CONCLUSIONS

A theory of the mechanism of pain in reflex sympathetic dystrophy is presented.

Sympathectomy was performed on 29 of 57 consecutive patients with reflex sympathetic dystrophy seen in the last five years.

Eleven of the 57 patients received adequate relief by one or more sympathetic nerve blocks with procaine hydrochloride, sometimes reenforced by trigger block.

Temporary relief by sympathetic nerve block with procaine hydrochloride indicates the need for sympathectomy.

Failure to obtain relief by sympathetic nerve block with procaine hydrochloride makes relief by sympathectomy unlikely, even if other symptoms of sympathetic dystrophy besides pain are objectively present.

Twenty-two of 29 patients (76 per cent) on whom sympathectomy was performed for reflex sympathetic dystrophy obtained satisfactory to complete relief of pain. Two more patients received only slight relief of pain and need further surgical or physical therapeutic measures for complete relief, measures which we have found are more likely to succeed when the sympathetic pathway is cut.

Sympathectomy should be done, therefore, before necessary local surgical procedures or painful physical therapeutic measures are attempted.

Five patients (17 per cent) received no relief whatsoever. Two of these patients had received no previous relief from sympathetic nerve block with procaine hydrochloride and this fact would seem to preclude the success of sympathectomy. Of the remaining 3 patients, 1 did not have a previous diagnostic block, 1 needs scalenectomy and the last has complicating angina of effort.

The possibility of rapid regeneration of sympathetic nerves militates against permanent good results of sympathectomy in some patients.

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ABSTRACT OF DISCUSSION

DR. GEZA DE TAKATS, Chicago: One can hardly overemphasize the importance of Dr. Evans's contribution. The syndrome of reflex dystrophy or, what is a broader term, the causalgic state, is far more frequent than is ordinarily supposed. It not only appears after comparatively mild, blunt trauma affecting the terminal parts of the extremities, but it plays a role in the symptomatology of such disjointed conditions as rheumatoid arthritis, diabetic neuropathy, adhesion pains after laparotomies and many other lesions in which there exists a chronic continuous stimulation of sensory pathways which produces chronic sensory, vasomotor and motor phenomena. I agree with Dr. Evans that the early effective block of the sympathetic pathways is the most satisfactory method of treatment. His careful analysis of failures reemphasizes the importance of never advocating sympathectomy unless relief from pain has been obtained by procaine block of the sympathetics and secondly that incomplete sympathectomies may result in failure or recurrence. It is now sufficiently clear, particularly from army experience, that sympathectomy for causalgia of the lower extremities must be so extensive that it may necessitate the resection of the eleventh and twelfth thoracic ganglions along with the first and second lumbar ganglions. No such difficulty seems to be encountered in the upper extremities, where resection of the second and third ganglions with root section of the second and third intercostal nerves is sufficient. That long-lasting causalgias have difficulty because of stiff joints, short tendons and atrophic muscles simply reemphasizes the importance of early recognition and treatment of such states. Compensation neurosis and hysteria are the two great hurdles in this field. One must insist on early settlement, and it is doubtful whether any such patient should be treated before settlement is reached. The value of sham injections is also obvious; the dramatic long-lasting relief from procaine injections must be analyzed with the help of injecting isotonic solution of sodium chloride through procaine wheals; recently 2 patients received relief from this procedure, thereby dissuading me from doing a sympathectomy. A word should be said about the mechanism of relief following sympathectomy. If this were a reflex sympathetic dystrophy, as I suggested in 1937, sympathectomy would cut the efferent arc of the reflex; but many observations which have accumulated since then make me suspect that this is a true antidromic, sensory nerve stimulation which is certainly unwisely treated by local excision and which responds to sympathectomy because section of the sympathetic efferents diminishes the number of impulses reaching the injured, irritable noninsulated sensory neuron. The sympathectomized extremity, even in a noncausalgic limb, has a raised threshold for pain, a fact which explains many a puzzle of the so-called extrasensory auxiliary pathways for pain.

CAPTAIN W. K. LIVINGSTON (MC), U.S.N.R.: Dr. Evans is to be congratulated. Out of 29 cases a ganglionectomy failed to afford a substantial or complete relief in only 7 cases. I would consider these results exceptionally good. Dr. Evans is correct in stating that when a preliminary procaine block of the sympathetics fails to afford temporary relief it is reasonable to assume that a ganglionectomy will probably fail. I would add the fact that even when the procaine block affords temporary relief the ganglionectomy may fail to confer a satisfactory result. In my opinion there are three reasons why this should be so: 1. The phase of active vasodilatation which follows immediately after a block or a ganglionectomy does not persist for long, and although relief may be obtained during this primary phase, the pain may recur when the vessels regain some tone. 2. Sympathetic nerves have a remarkable ability to regenerate. I have had the disappointing experience of seeing pain return a few weeks after ganglionectomy and have been able to demonstrate that within two or three months sympathetic fibers have successfully bridged a considerable anatomic gap. 3. These so-called sympathetic dystrophies begin as a result of irritation at some focal or "trigger point." A sympathetic ganglionectomy does not remove this source of irritation, and not infrequently the pain and many of the associated dystrophic phenomena will recur even in the absence of the sympathetic component. In my opinion the most significant feature of this paper is the fact that 11 of 12 patients treated with procaine block alone were completely cured of their pain. These 11 patients represent almost 20 per cent of this whole series. The fact that procaine block gives a satisfactory result without the need to resort to a surgical excision indicates to me that the syndrome represents a disturbed physiology which the injection acts in some mysterious manner to correct. I am always in favor of trying repeated procaine block of the sympathetics before resorting to the use of alcohol or a surgical excision of the ganglions for three reasons: 1. I hesitate to excise sympathetic ganglions which in their normal state must serve useful functions, some of which functions we may not yet understand. 2. When a surgeon excises the sympathetic chain he has removed the point of attack at which the syndrome is most vulnerable. 3. Since I believe that this is a disturbance of physiology, I would prefer to treat it with physiologic methods rather than surgical excisions. This paper emphasizes two points which are of great importance to the clinician who undertakes to treat painful dystrophies. One of these is that the sympathetic nerves play an important part in sustaining the dystrophy and represent the most logical point for surgical attack. The second point is equally obvious in this paper, that is, a sympathetic ganglionectomy is not a cure-all for painful dystrophies.

DR. JAMES A. EVANS, Boston: I thank Dr. de Takats and Dr. Livingston for so ably discussing this difficult problem. I do not want to leave the impression that sympathectomy is a cure-all for this syndrome. It is a very difficult kind of case to handle in many instances. One must not lose sight of the psychosomatic feature of these cases, and fake blocks are often necessary to bring this out. Litigation neurosis enters into this again and again, as has been pointed out. I also want to state that a series of blocks will cure many of these patients without having to resort to the more radical sympathectomy.

THE MALARIA PROBLEM TODAY

Influence of Wartime Experience and Research

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In dealing with present day problems of malaria, attention in this paper will be centered on potential benefits forthcoming as a result of wartime experience and wartime research. From this experience and research, important advances in the field of malariology have followed. In particular, they have contributed to improved methods in the treatment of malaria and to new approaches in regard to prevention.

CLINICAL MALARIA

Army and Navy statistics [1] for World War II reveal a total of 572,950 reported admissions for malaria. Actually, it is probable that, had complete reporting been possible, the total would have more nearly approximated a million admissions. Whatever the exact figure, clinical experience on an unprecedented scale was gained, and as a result many interesting and exceedingly important developments took place in the field of clinical malaria.

Substitution of Quinacrine Hydrochloride for Quinine.—A development of foremost importance is that during World War II quinacrine hydrochloride displaced quinine from its agelong position of preeminence.

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Read in the General Scientific Meetings at the Ninety-Fifth Annual Session of the American Medical Association, San Francisco, July 2, 1946.

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1. Sapero, J. J.: Tropical Diseases in World War II Returnees, to be published.

As a result, never again will it be necessary to face the serious problem of an irreplaceable shortage of quinine such as that which occurred early in the war when most of the cinchona plantations fell into the hands of the enemy.

Although the drug had been known for some years, even before the outbreak of the war, it had never come into general use. Instead, almost full reliance had been placed on quinine. The relatively small number of physicians who had had experience with quinacrine hydrochloride were not certain concerning either its therapeutic capabilities or its toxic potentialities.

As quinine became more and more scarce during the war, physicians found themselves forced to use quinacrine hydrochloride. It became apparent soon that the clinical response to this drug was equivalent to that of quinine. In regard to the toxicity of quinacrine hydrochloride, overseas experience demonstrated, contrary to previously expressed opinions, that the drug had an exceptionally low toxic factor. It is true that initial gastrointestinal intolerance occurred, but this shortcoming was largely corrected by adjusting the initial dosage. The claims that hepatitis, psychoses and other severe toxic manifestations would occur were not substantiated. It seems probable, in fact, that the exceedingly infrequent serious toxic manifestations which did take place actually did so less commonly than would have been the case had quinine been used on a like scale.

Incurability of Pacific Malaria Due to Plasmodium Vivax.—With the establishment of quinacrine hydrochloride as an efficient and safe antimalarial, the next problem which arose was the failure of either quinine or the other drug to cure the South Pacific strain of malaria due to Plasmodium vivax. After treatment of the primary attack, this strain of malaria almost inevitably relapsed, did so promptly and continued to relapse with discouraging persistency, irrespective of treatment. This was unlike clinical experience with malaria due to P. vivax in the United States. It was characteristic of the primary attack of the American strain to respond promptly to treatment. There would then follow a latent period of some seven to eleven months before relapses were to be expected. Further, the average duration of infection was shorter. American infections caused by P. vivax terminated usually within a period of eighteen months; South Pacific infections, in contrast, continued frequently on into the third year.

The Search for a Curative Drug.—The exceedingly discouraging experience in the attempt to cure South Pacific malaria due to P. vivax led to an unparalleled program of research, both in the United States and elsewhere, in an attempt to synthesize a drug capable of curative effect. As a result, a large series of chemicals were explored and subjected to clinical tests. One of these, originally referred to as SN-7618 and now officially known as chloroquine,[2] has reached the stage of practical clinical application. This drug, against well standardized strains of Plasmodium falciparum and P. vivax, has shown an activity approximately three times that of quinacrine hydrochloride. To date it has presented little evidence of toxicity. It does not cause the gastrointestinal intolerance so frequently encountered in using quinacrine, nor does it stain the skin. Furthermore, it rapidly controls clinical symptoms in both the P. vivax and the P. falciparum types of malaria and is curative in the latter. In benign tertian infections it is not curative but tends to prolong the intervals between relapses beyond that observed with either quinacrine hydrochloride or quinine.

Although it appears that chloroquine may be superior to both quinine and quinacrine as an antimalarial, its failure to cure malaria caused by P. vivax has necessitated further investigation in the hope that a curative drug may be found. In the course of such investigations, it has been found that pamaquine, as had been previously claimed, is capable of curing malaria due to P. vivax. Unfortunately, the curative dosage is close to the limit of tolerance and too toxic to serve as an answer to the present need for a curative drug.

Pentaquine (SN-13276), which is closely related to pamaquine, has been recently explored and found to be approximately equal in activity and only half as toxic. Although it represents a promising lead, further search is being made, as there is a need for a drug of even less toxicity. Much publicity recently has been given to Paludrine, a recent product of British investigation. This antimalarial has a chemical formula (N_1-p-chlorophenyl-N_5-isopropyl biguanide) which differs from that of any drug so far tested. From present indications, however, it will not cure benign tertian malaria and thus from a practical point of view does not seem to be superior to chloroquine.

New Concepts of the Parasitic Cycle in the Human Host.—The confusion which followed when South Pacific infections caused by P. vivax failed to respond to therapy in a manner similar to that of the American strain can readily be realized. It is now known that this confusion was largely unnecessary. It was a result of improper concepts which for years have been passed along in the general teaching in regard to malaria. The cycle of the parasite in the human host has been generally taught to be a simple parasitic invasion of red cells, taking place shortly after mosquito inoculation of sporozoites. Thereafter, almost total emphasis has been placed on the periodic, cyclic development of the parasite in the red blood cells. The concept, in regard to treatment, has further postulated that if drugs are given in adequate amounts and for a sufficient length of time, the parasites in the red cells will be destroyed and the infection cured.

With such a version, the tendency is to ascribe therapeutic failure or success directly to the precise method of treatment with a drug. Thus, in the case of the South Pacific strain, relapses and persistency of infections were thought to be essentially an expression of the failure to use adequate dosage or failure to prolong therapy sufficiently. This type of thinking during the war led clinicians to attempt almost every conceivable modification in treatment in the hope of obtaining curative results. Such attempts, nevertheless, even with inordinately large amounts of drug used over prolonged periods failed appreciably to modify the course of the disease.

What then is wrong with this concept? It is simply that the cycle of the parasite in the human host is almost certainly far more complicated than the simple version on which clinicians in the past have relied. The modern view emphasizes that after the inoculation of sporozoites, invasion of endothelial cells or other fixed tissue cells takes place. Within these cells it is thought likely that the parasites undergo a distinct cycle of development before they are discharged into the blood stream, there to begin the so-called erythrocytic cycle.

2. Activity of a New Antimalarial Agent, Chloroquine (SN-7618), Board for the Coordination of Malarial Studies, J. A. M. A. **130:** 1069 (April 20) 1946.

An essential part of this modern version is the postulate that persistency of infection and malarial relapse are closely linked with the cyclic development of parasites in the fixed tissue stage. Thus, the essential mechanism of relapse is conceived to result from periodic discharges of tissue forms into the blood stream. The persistency of an infection, on the other hand, is an expression of the length of time during which the development in fixed tissues continues. If this is true, it is clear why the P. falciparum and the P. vivax types of malaria are so different both in regard to the rate of relapse and the length of infection. A short period of development in the fixed tissue stage plus complete expulsion of all the parasites would lead to a short term infection without relapse. This, indeed, is characteristic of malaria due to P. falciparum. Conversely, a prolonged period of fixed tissue development with repeated partial expulsion of parasites would lead to a relapsing disease, and to its termination only when all the parasites were expelled. This, in general, characterizes infections due to P. vivax. Finally, if fixed tissue development differs in various strains of one species, different clinical patterns will follow. Such differences are exhibited by South Pacific and American strains of P. vivax and on the basis of this concept become readily understandable.

A most significant corollary to the modern concept is that which relates to therapy. Antimalarial drugs act principally, and usually almost exclusively, either on forms of the fixed tissue stage or on parasites in the erythrocytic phase. For example, quinine, quinacrine hydrochloride and chloroquine are known to act on the latter. Pamaquine, Paludrine and pentaquine act principally on the fixed tissue forms. With this knowledge it can readily be seen why quinacrine hydrochloride, which belongs to the former group of drugs, fails to cure benign tertian malaria. It can eradicate parasites in the red cells, but if relapse is a function of the fixed tissue phase, on which the drug is without effect, cure cannot be obtained. In contrast, it becomes evident why such a drug as pamaquine is curative, since the drug is capable of destroying fixed tissue forms and thereby eliminates relapses.

Unfortunately, conclusive evidence of a fixed tissue stage in man has yet to be demonstrated. There is, nevertheless, much to support the postulation of its existence. Such a stage has already been demonstrated by Huff [3] and others in several types of avian malaria. Recently Fairley [4] has shown in transfusion experiments in human volunteers that sporozoites disappear from the blood stream within thirty minutes after mosquito inoculation. On the seventh day in infections due to P. vivax and on the ninth day in those caused by P. falciparum he found that the parasites reappear in the circulation with remarkable regularity. The preciseness with which the parasites reappear strongly indicates that in some fixed tissue of the body a uniform, periodic cycle of development is taking place. Such evidence as this, plus the actual demonstration of an exoerythrocytic stage in birds, leaves little doubt that final proof of a similar stage in man will be forthcoming.

Despite the fact that the modern version of a preerythrocytic cycle of parasitic activity in the human host is as yet unproved, the experience of war years virtually forces its general acceptance. It explains differences in species and in strains and peculiarities of therapeutic response which formerly were left unexplained. It has passed from the stage of being an abstract concept of only passing interest to that of being one essential to the clinical management of malarial infections.

3. Huff, C. G., and Coulston, F.: Development of Plasmodium Gallinaceum from Sporozoite to Erythrocytic Trophozoite, J. Infect. Dis. **75**: 231 (Nov.-Dec.) 1944.

4. Fairley, N. H.: Chemotherapeutic Suppression and Prophylaxis in Malaria, Tr. Roy. Soc. Trop. Med. & Hyg. **38**: 365 (May) 1945.

PREVENTION AND CONTROL OF MALARIA

In regard to measures which relate to the prevention of malarial infections and to basic procedures of control, war time experience and research have made important contributions in the following respects: (*a*) more effective anopheline control by the advent of DDT (4,4'-dichlorodiphenyltrichloroethane); (*b*) more effective drug prophylaxis as a result of the development of new drugs and improved methods in the use of drugs which formerly produced only mediocre results, and (*c*) renewed emphasis on the fact that effective malaria control is attained only to the extent to which organized methods are employed and carried out by a team of specialists.

Role of DDT.—Prior to World War II, the main attack on anophelines was almost solely confined to measures which would destroy larval forms. Measures against adult mosquitoes were difficult and infrequently attempted. With the introduction of DDT, however, the attack has become twofold, i. e., against both larvae and adults.

In the attack against the larval stages, the advantage of DDT has been found to rest principally in the efficaciousness of light applications. For example, 2 quarts per acre of a 5 per cent solution of DDT in diesel oil will now suffice to accomplish as effective a kill as that previously obtained by 20 to 40 gallons of oil without DDT. These light applications thus enable an important saving of oil, of time and of labor to be effected.

Where there are large areas to cover, airplanes have proved effective for the dispersal of DDT. In the extensive trials conducted during the war, different types of planes were used, varying from the small cub plane which would carry only 27 gallons to large multimotored transport planes with a capacity of many hundreds of gallons. These wartime trials indicate that the airplane in the postwar period will serve as an important aid to malaria control, not only as a device for saving time and labor but also for the control of areas otherwise inaccessible.

In the use of DDT to control adult mosquitoes, many promising possibilities are being explored. During the war military forces found that by impregnating bed nets, by spraying the inside of tents and other types of housing and, particularly, by spraying native quarters a significant reduction of the adult mosquito population could be accomplished. The attack on adult mosquitoes means that malaria transmission in an uncontrolled area can be stopped far more readily than has ever before been possible. No longer is it necessary to wait for the natural mortality of infected adult insects, as was formerly the case when the attack was made exclusively against larvae. Even more promising are current experiments in which complete control is being attempted solely by adult kill. Such experiments, it is hoped, will prove that whenever larvicidal measures are impractical for reasons of cost or inaccessibility, effective control by adult eradication can nevertheless be achieved.

This kill of adults is accomplished by the prolonged residual action of DDT. Another method of kill developed during the war is the use of aerosols containing

DDT. Under favorable conditions, these aerosols are capable of killing both adult mosquitoes and larvae in a single operation. The method represents an important lead which may prove of value in the control of malaria in civilian communities.

Repellents.—A great deal of wartime research was directed toward the development of new repellents. Unfortunately, repellents at present appear to have so many limitations that their general usefulness for protection against malaria does not seem promising. It is difficult to be certain that persons will use repellents regularly enough to afford any real degree of protection. In fact, a general principle learned during the war was that any measure of malaria control which relies on individual initiative is usually ineffective. Another inherent limitation to the use of repellents is that those which are effective against one species of mosquito frequently are largely without effect against another. Despite these limitations, present day repellents are vastly superior to those used in the past. In the future, persons who will take the trouble to use them will benefit thereby.

Drug Prophylaxis. — Wartime experience and research has greatly extended the usefulness of drugs for prophylactic purposes. It is now possible for military forces to operate in highly malarious, uncontrolled areas without significant malarial morbidity.

During the war, early results obtained with drugs were poor because of insufficient knowledge regarding their capabilities. As an example, rates at Guadalcanal, with all troops supposedly on suppressive treatment, soared to over 1,700 per thousand per annum. It is now known that these rates were unnecessarily high. They were a reflection of the misuse of drug prophylaxis.

The proof of this misuse came later as a result of a series of revealing investigations in the United States, Britain, Australia and elsewhere. These demonstrated that: (*a*) both quinacrine hydrochloride and quinine are fully preventive against malaria due to P. falciparum merely by prolonging the administration of the drug for approximately a month after the last exposure; (*b*) in malaria due to P. vivax these drugs are capable merely of suppressing clinical symptoms, and that overt attacks are inevitable when administration of the drug ceases; (*c*) quinacrine hydrochloride is superior to quinine as a suppressive, and (*d*), the mechanism of protection is not due to a destruction of infective organisms but to the reduction of parasitemia to a level insufficient for the production of clinical symptoms.

Carefully controlled human experimentation has further shown that various factors, such as combat fatigue or any other type of hard physical exertion, extreme cold, anoxia, blood loss and other factors do not precipitate "clinical break-throughs" in persons taking a drug as a suppressive measure. It has been definitely proved that failures with quinacrine hydrochloride which is taken in the recommended suppressive dosage are extraordinarily rare. Clinical break-throughs in troops are now known to be due to failure to take the drug, in the vast majority of cases.

This knowledge gained during World War II has important implications in the present day control of malaria in civil communities. As an example, labor forces working in highly endemic areas can carry on their work effectively to the extent that it is possible to insure that each member of the group takes the prescribed doses of quinacrine hydrochloride. Where malaria due to P. falciparum is prevalent, complete protection will be afforded. With infections due to P. vivax, the eventual problem of curing infections which have been temporarily suppressed must be faced when suppression by means of the drug is discontinued.

New Drugs.—Quinacrine hydrochloride has the serious drawback of staining the skin. In addition, many persons, on initial administration of the drug, experience gastrointestinal symptoms. For this reason, plus its inability to render any more than temporary protection in malaria due to P. vivax, attempts have been made to find other drugs which would not have these shortcomings. In this respect, chloroquine, recently developed, has the advantage that it will not stain the skin, nor does it so commonly lead to gastrointestinal symptoms as does quinacrine usage. Another advantage is that it needs to be administered only in a single weekly dose. This is exceedingly important, as careful supervision of weekly administration is much more feasible than the daily supervision required in the use of quinacrine. Chloroquine, like quinacrine hydrochloride, permits suppressive cure in infections due to P. falciparum and affords only temporary protection against malaria due to P. vivax.

This partial protective effect means that the important need of producing a fully protective drug against infection due to P. vivax has yet to be fulfilled. Some progress seems to have been made toward this objective with Paludrine. It has been shown that this drug, in malaria caused by P. falciparum, is capable of preventing infection, i. e., acts as a true causal prophylactic. Preliminary experiments against the infections due to P. vivax to date indicate that it exerts at least a partial causal prophylactic effect and does so in doses which appear to be nontoxic.

Entomologic Control.—Early in 1942, in the New Hebrides, the first large scale American occupation was followed by a 60 per cent malarial incidence in certain units during the first sixty days after arrival. A year later, malaria was no longer a major problem. By the following year, measures of control had been so successful that the appearance of a single primary case of malaria was viewed as a matter of concern. These dramatic results were achieved despite the prediction of the islands' residents that malaria control was impossible to effect and that every member of the military forces inevitably would acquire the disease.

The striking reduction in the incidence of malaria was not a result of new and revolutionary methods. It was simply the product of organized efforts applied by trained personnel. In this respect the key person probably was the entomologist. For example, on Efate, prior to organized efforts by trained personnel, the island had been surveyed by inexperienced workers. As a result, control efforts were centered on the removal of half shells from the extensive coconut plantations, since these shells appeared to be prolific sources of mosquitoes. The attempt to gather and burn coconut shells constituted a measure requiring enormous effort. With the arrival of the entomologist, it was soon determined that the vectors of malaria did not breed in coconut shells. In contrast, in the margins of several small streams not previously investigated, anophelines were found breeding profusely. It was a far simpler task to control breeding on these few streams. Results in reduced malarial incidence were soon forthcoming; however, had the original approach been continued, not a single anopheline larva would have been killed, nor would a single case of malaria have been averted.

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While the entomologist was a key person in that his training enabled him to locate the single species transmitting malaria and to concentrate efforts on that species, the rapidity with which control was achieved was actually the expression of teamwork on the part of various workers. Thus, in addition to the entomologist, a malariologist directed the overall program and an engineer carried out control operations.

Malaria control not only succeeded on Efate but also met with similar success on the many other islands of the South Pacific where specialists and organized methods were employed. The present day significance of these wartime achievements in the control of malaria is that they reemphasize the fact that a like approach in civilian communities is essential. With such methods, according to Russell,[5] "One may reasonably hope that, with suitable organization, malaria will be eradicated from the United States within the next decade, and that in many tropical areas, even though economically depressed, this disease, now of the greatest importance, may become in the next half century one of the least of public health problems."

ANASTOMOSIS OF THE AORTA TO A PULMONARY ARTERY

Certain Types in Congenital Heart Disease

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In 1945 Blalock and Taussig[1] introduced a new surgical procedure for the relief of anoxemia due to pulmonary stenosis or pulmonary atresia. By anastomosing the subclavian or innominate artery to either the right or the left pulmonary artery they have been able to increase the flow of blood to the lungs. Their work is an outstanding contribution to the relief of children whose outlook without aid is hopeless. Sacrifice of the subclavian artery for the anastomosis of its proximal end to the side of a pulmonary artery is associated with little danger to the circulation of the arm. Use of the innominate artery for such an anastomosis entails the hazard of an inadequate supply of blood to the brain.

The possibility of making a direct anastomosis between the aorta and the adjoining pulmonary artery was reviewed. Gross and Hufnagel [2] and Blalock and Park [3] concluded from their experimental work on animals that clamping off the aorta completely for any considerable length of time leads in a fair percentage of experiments to paralysis of the hind legs caused by temporary anemia of the spinal cord. An anastomosis, therefore, between the aorta and the pulmonary artery can be performed safely only if a substantial amount of blood is flowing through the aorta during the procedure. This was made possible by the use of a new type of clamp which two of us have designed (W. J. P. and S. S.), which is illustrated in figure 1. The two flanges of this clamp encircle the aorta and, when closed, pinch off a small but sufficiently large portion of the aorta to allow room for an anastomosis. The major portion of the aorta lies in the hollow of the clamp and rests against it. Since each pulsation of the enclosed aorta is transmitted to the back of the clamp with the same force as that which acts against the portion of the aorta which is occluded, there is no tendency for the clamp to slip off. It is unnecessary to tighten the clamp beyond simple occlusion. When the clamp is closed the lumen of the aorta is reduced to approximately half its size.

Other instruments which we developed or designed for the aortic pulmonary anastomosis are illustrated in figure 2.[4]

The details of aortic pulmonary anastomosis were worked out on approximately 30 dogs. This operation could not have been performed successfully on the human being without preliminary work on animals. Although the experimental work will be reported later, it is pertinent to state here that none of the animals showed any postoperative paralysis of the hind legs.

TECHNIC

Aortic pulmonary anastomosis has been performed on 3 children. Although there were slight variations in each operation, the technic in general was as follows:

Cyclopropane and oxygen anesthesia was used. In an operation of this type expert anesthesia is essential. This was given by Dr. Wm. O. McQuiston.

A cannula was inserted into the saphenous vein at the ankle for the continuous administration of plasma and for the emergency administration of blood. The child was placed on its right side with the left arm abducted and fastened to the anesthetic shield. A curved incision was made below the left scapula from the edge of the erector spinae muscles to the nipple line (fig. 3 *A*). The chest was entered by an incision through the fourth interspace, and adequate exposure was obtained with a ribspreader. The collapsed upper lobe of the lung was displaced from the operative field by a wet laparotomy pad.

The left pulmonary artery was identified and freed from surrounding structures by blunt dissection. Small tortuous veins overlying the artery were tied and cut. The artery was occluded for two minutes to determine whether the right pulmonary artery alone would carry sufficient blood to support life during the time required for the anastomosis. Detectable changes in color, pulse rate, respiratory rate and blood pressure were not observed in any case. The aorta was then dissected from its bed. With scissors an incision was made through the reflection of the parietal pleura over the lateral surface of the aorta, just distal to the arch. The vagus nerve was identified in its position between the aorta and the pulmonary artery and displaced posteriorly. The intercostal arteries arising from that portion of the aorta to which the clamp was later to be applied were doubly ligated with silk and cut between the ligatures. Two silk ligatures were placed around the pulmonary artery, each encircling the vessel twice. One was placed as far distally as possible, the other as far proximally as possible (fig. 3 *B*). The pericardial sac

5. Russell, P. F.: Lessons in Malariology from World War II, Am. J. Trop. Med. **26:** 5 (Jan.) 1946.

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We wish to acknowledge the cooperation of Dr. A. J. Carlson and Dr. A. C. Ivy, as well as that of the resident and nursing staffs of the Children's Memorial Hospital.

The experimental work was aided by the Otho S. A. Sprague Memorial Institute and by the Northwestern University Women's Faculty Club Fellowship in Pediatric Surgery to Dr. Sidney Smith.

1. Blalock, A., and Taussig, H. B.: The Surgical Treatment of Malformations of the Heart in Which There Is Pulmonary Stenosis or Pulmonary Atresia, J. A. M. A. **128:** 189-202 (May 19) 1945.

2. Gross, R. E., and Hufnagel, C. A.: Coarctation of the Aorta, New England J. Med. **233:** 287-293 (Sept. 6) 1945.

3. Blalock, A., and Park, E. A.: The Surgical Treatment of Experimental Coarctation (Atresia) of the Aorta, Ann. Surg. **119:** 445-456 (March) 1944.

4. These instruments and the clamp shown in figure 1 were made for us by V. Mueller and Co., 408 South Honore Street, Chicago.

was not opened. The clamp was then applied to the aorta and slowly closed (fig. 3 *C*). In each patient after the clamp was closed a thrill was palpable distal to the clamp, indicating that blood was rushing through the constricted aorta. If a section of aorta sufficiently large for anastomosis did not protrude beyond the

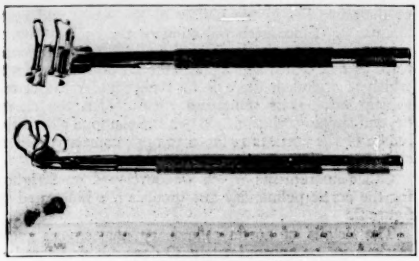

Fig. 1.—Clamp for anastomosis of the aorta to a pulmonary artery.

flanges of the clamp as it was closed, the adventitia of the aorta was grasped and enough of the aorta drawn out to make suture technically possible. The adventitia was dissected only from that portion of the aorta protruding from the clamp. With an extremely sharp, small-blade knife a longitudinal incision 5/16 to 6/16 inches (8 to 9.5 mm.) long was made in the clamped-off portion of the aorta. While this incision was being made the rounded wall of the aorta was flattened by pressure with the spread prongs of a tissue forceps. Unless the wall of the aorta is cut squarely, the edges have a tendency to fray. The two ligatures doubly encircling the pulmonary artery were tied to the corners of the clamp, thus simultaneously occluding the vessel and alining it with the aorta for anastomosis. Opposite the incision in the aorta an incision of similar size was made in the occluded pulmonary artery. This incision was made slightly diagonal so that at completion of the anastomosis the vessels in assuming their normal relationship would not produce a kink in the pulmonary artery (fig. 3 *D*).

The anastomosis was done with no. 5 Deknatel silk on a no. 9 curved atraumatic needle. The suture, beginning at the upper angle, was carried through the pulmonary artery from the outside in, then across through the aorta from the inside out—and tied (fig. 3 *E*. This brought the knot outside the vessels. In continuation of this suture, the posterior lip of the pulmonary artery was sewed to the posterior lip of the aorta by a running, over and over stitch. These stitches, approximately 1 mm. apart, included all layers of both vessels. In this portion of the anastomosis adventitia was brought to adventitia. At the lower angle of the wound the suture was locked and then continued as a running suture, bringing the anterior lip of the pulmonary artery to the anterior lip of the aorta, intima to intima. The long end of the suture was tied to the short end to complete the anastomosis. The ligatures holding the pulmonary artery to the clamp were cut, first the distal, then the proximal. The aortic clamp was then slowly released and removed. In no instance was there enough bleeding to require additional sutures. In each patient the thrill of blood flowing through the new opening could be felt.

The lung was reexpanded, and the incision in the chest was closed with three chromic gut sutures encircling the adjoining ribs. The muscles were reunited, and the skin was closed with silk.

REPORT OF CASES

We shall not undertake a discussion of the criteria for diagnosis of the tetralogy of Fallot. These criteria have been set forth by Blalock and Taussig, and we have attempted to select our cases in accordance with the principles which they have laid down.

Case 1.—*History and Examination.*—D. S., a girl, born Dec. 10, 1944, weighing 6 pounds and 10 ounces (3,005 Gm.), appeared to progress normally until she reached the age of 3 months. At that time the mother observed that the baby became blue around the lips during her feeding and seemed quite limp at the conclusion of her meal. The cyanosis increased gradually in intensity, was particularly noticeable after feeding, crying or fretting and eventually was observed even when the infant was at rest. Dyspnea became evident as time went on. Finally her condition became so poor that feeding was a serious problem. If she were fed a little too much or took her food too rapidly she became extremely cyanotic and limp, her eyes became fixed, and she lapsed into unconsciousness. On two occasions the mother thought that the child was dead. The entire household was organized with the single thought of contributing to her comfort. Her 3 year old brother was kept from her room, and neighboring children were not allowed to play in the house.

Though the child had sat up at 6 months, she had never walked or stood alone. She had gained slowly in weight.

She was first seen by us on Sept. 9, 1946 at the age of 21 months. Her weight at that time was 18 pounds 4½ ounces (8,291 Gm.). She was intensely cyanotic. The fingers were clubbed. Examination of the heart revealed a harsh systolic murmur along the left sternal margin. The roentgeno-

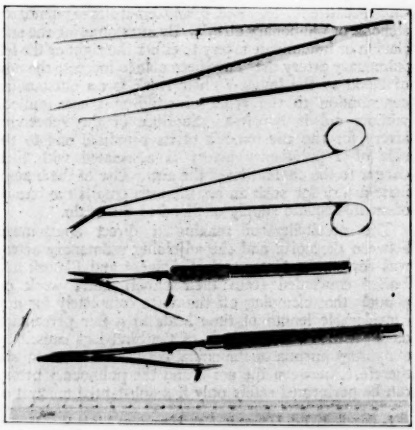

Fig. 2.—Essentially standard instruments modified to work in a small, deep cavity.

gram did not show enlargement of the heart. The heart appeared to sit high on the diaphragm, and the apex was blunt and rounded. There was a concavity in the region of the pulmonary cone. The aorta could be seen in its normal position. Fluoroscopic examination failed to show pulsations in the pulmonary arteries. The electrocardiogram showed axis deviation to the right. The red blood cell count was 10,310,000 per cubic millimeter, the hemoglobin level was 18.6 Gm. Because

of the patient's critical condition, oxygen saturation studies of the arterial blood were omitted. We believed that she presented the typical picture of a severe case of the tetralogy of Fallot.

Operation.—The operation was performed on Friday, Sept. 13, 1946. Cyclopropane anesthesia with a high concentration of oxygen was given by the closed method with a snugly fitting face mask. The child's color improved greatly at the beginning of anesthesia and remained good throughout the operation.

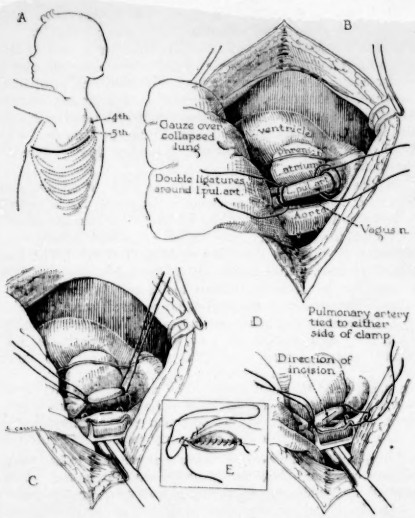

Fig. 3.—Technic of operation: *A*, incision; *B*, ligatures around pulmonary artery; *C*, clamp applied to aorta, and *D*, diagonal incision of occluded pulmonary artery, and *E*, the suture.

The left pleural cavity was entered posteriorly through the third interspace. The incision was too high. Adequate exposure was not obtained until the fourth, fifth and sixth ribs were cut along the erector spinae muscle. The pulmonary artery was identified and exposed without difficulty. Small, tortuous, dilated veins lying on the pleura over the aorta were tied and cut. On lifting the aorta from its bed, we observed an unusual number of small arteries, at least a dozen, arising from that small portion of the aorta where the clamp was to be applied. Some of them were intercostal arteries, and the rest presumably were vessels which had dilated in response to a demand for collateral circulation to the lung. Isolating, ligating and cutting these vessels was the most tedious and time-consuming part of the operation.

Since the pulmonary artery lay in the same plane as the aorta, the incision in it was made parallel with its longitudinal axis. The actual anastomosis was performed without difficulty and required twenty-three minutes. When the clamp was removed a palpable thrill could be felt in the anastomotic channel. The chest was closed. The total operating time was three hours.

The blood pressure at the beginning of the operation was 95 systolic and 60 diastolic; at the close of operation it was 100 systolic and 60 diastolic. When the clamp was tightened on the aorta, the systolic blood pressure rose 10 points but in a few minutes returned to its previous level. The pulse rate remained practically constant throughout the operation at 120 to 132 beats per minute. The patient received 200 cc. of plasma during the operative procedure.

Postoperative Course.—The infant was brought to her room in good condition. She received 100,000 units of penicillin in the plasma which was being administered by vein. Thereafter she received 30,000 units of penicillin every three hours for ten days. In the first twenty hours following operation she received 200 cc. of 5 per cent dextrose in isotonic solution of sodium chloride and 625 cc. of a solution of 10 per cent dextrose in water. Her postoperative course was remarkably smooth. She was kept in an oxygen tent for three days. Vomiting did not occur. She began taking fluids twenty-four hours after operation and was given a soft diet on the following day. The lungs remained clear. Examination of the heart revealed a slight carry over of the murmur into diastole, though it was not comparable to the harsh continuous murmur which one hears in the typical patent ductus. The most striking change was in her color and in her general behavior. She took her food without difficulty; when disturbed by her doctors she cried for several minutes without turning blue, and in the intervening time she was happy and playful. She gained a pound (454 Gm.) in the first eleven days after operation.

On the third day following operation her red blood cell count was 6,600,000 per cubic millimeter, hemoglobin content 14.3 Gm. and hematocrit reading 44. Subsequent counts at three day intervals gave substantially the same results. She was discharged from the hospital on October 2, nineteen days after operation. A later note from the mother states that the baby's condition is excellent, and that her color compares favorably with that of the other children who now come in to visit her.

CASE 2.—*History and Examination.*—G. M., a girl, born Jan. 21, 1935, made her first visit to our outpatient department at the age of 14 months because of inabiltiy to move her left arm and leg during the previous three days. Examination at that time revealed slight generalized cyanosis with a deeper color about the gums, lips and fingertips. A systolic murmur was heard over the precordium, maximal in the second and third interspaces on the left side along the sternal margin. A thrill was palpable. A left hemiparesis was present. The deep reflexes on the left were increased. Ankle clonus and positive great toe reflex were present. The diagnosis at that time was congenital heart disease complicated by cerebral thrombosis. She was seen at intervals in the outpatient department. She became gradually more cyanotic, was very late in walking, and her mental progress was slow.

She was admitted to the hospital on Sept. 5, 1946, at the age of 11 years and 8 months. She was a small, thin child, weighing 54 pounds (24.5 Kg.). The left arm and leg were smaller than the right, with some spasticity due to the cerebral accident which had occurred in infancy.

The entire skin was cyanotic with intense cyanosis about the eyes, lips and tips of the fingers and toes. Clubbing of the fingers and toes was well defined. Psychometric examination established her intelligence quotient at 66. Cardiac examination failed to reveal any enlargement. There was a short, harsh systolic murmur, best heard in the second and third interspaces on the left side and not widely transmitted. The roentgenogram showed slight cardiac enlargement, with a blunt, rounded apex. There was a concavity in the region of the pulmonary conus. Under the fluoroscope a pulmonary window was seen but pulsations were not observed in the pulmonary arteries. The electrocardiogram showed well defined axis deviation to the right. The red blood cell count was 10,190,000 cells, the hemoglobin level 26.5 Gm. and the hematocrit reading 79. The oxygen saturation of the arterial blood was 38.7 per cent.

Operation.—The operation was performed on September 16. Under cyclopropane and oxygen anesthesia the intense cyanosis did not improve appreciably.

There was persistent and troublesome bleeding from the severed muscles of the chest wall. The left pleural cavity was opened through the fourth interspace, and adequate exposure was obtained without cutting any ribs. Each time the upper lobe of the left lung was retracted there occurred a "bronchial spasm" which made it momentarily impossible to force oxygen into the lungs with a pressure bag. After repeated episodes,

it became obvious to the anesthetist that the administration of intratracheal anesthesia was necessary. Because of the extreme anoxia it was necessary to close the chest and reexpand the lung before the intratracheal tube could be introduced safely. Under intratracheal anesthesia the operation was resumed.

The hilus of the left lung was covered with a mass of tortuous veins black with cyanotic blood. The pulmonary artery was exposed and isolated with great difficulty. Any tiny vein accidentally torn oozed tarry blood, which obscured the field. The aorta was easily freed. Five intercostal arteries were doubly tied and then cut to make room for the clamp. Too rapid closure of the clamp on the aorta resulted in a rise in the systolic blood pressure from 100 to 132. The clamp was released, and the blood pressure returned to 100. When the clamp was closed more slowly the systolic blood pressure rose to 110 mm. and remained at that level throughout the anastomosis. On completion of the anastomosis, a thrill was palpable but was less intense than in the previous patient. The actual anastomosis required forty-five minutes. During the operative procedure the child received intravenously 100 cc. of isotonic solution of sodium chloride, 200 cc. of whole blood and 300 cc. of plasma.

Postoperative Course.—The patient was in poor condition when returned to her room. She was placed in an oxygen tent, and 100,000 units of penicillin was administered in the intravenous fluids. Subsequently 30,000 units of penicillin was given intramuscularly every three hours. She roused slightly several hours after operation, and it was then observed that she failed to use her right arm and leg. She remained in a semiconscious state. On the morning after the operation her color was distinctly improved. Some hours later she became dyspneic, and coarse moist rales were heard throughout the chest. Supportive treatment was ineffective, and she expired at 8:00 p. m. on September 17, thirty-six hours after the operation.

Postmortem examination revealed that the anastomotic channel was open. Leakage had not occurred. There was a small thrombus in the left pulmonary artery proximal to the site of anastomosis. The pleural cavity was dry. Thick mucopurulent secretion was present in the trachea and bronchi. The lungs were congested. A scar was found in the right frontoparietal region of the brain, obviously the result of the cerebral accident which the patient suffered at the age of 14 months.

On the left side a hemorrhagic infarct occupied the upper portion of the postcentral gyrus.

CASE 3.—*History and Examination.*—B. K., a girl, born Aug. 5, 1938, weighing 6 pounds, 8¼ ounces (2,969 Gm.), was first seen in the outpatient department at the age of 3 weeks, at which time she had a loud systolic murmur over the precordium, maximal at the third interspace on the left side. There was no cyanosis. A tentative diagnosis of defect of the interventricular septum was made. When the infant was seen on March 8, 1939 at the age of 7 months, the mother reported that the baby became breathless when a large amount of food was taken at one time. On Sept. 30, 1939 examination revealed cyanosis on crying and slight clubbing of the fingers. She was then lost to the clinic until Aug. 11, 1945. At that time she was definitely cyanotic and tired easily on exertion. She had grown slowly and weighed only 27½ pounds (12 Kg.) at the age of 7 years.

She was admitted to the hospital on Sept. 21, 1946. The mother stated that the child had recently been able to exercise less than formerly and would squat down to rest after walking half a block.

Physical examination revealed a small, slender child who was decidedly cyanotic, with suffusion of the eyes and clubbing of the fingers. Her weight was 29½ pounds (13 Kg.).

There was a harsh systolic murmur over the precordium, best heard on the left along the sternal margin at about the third interspace. Roentgenologic examination showed the heart to be slightly enlarged with a rounded blunt apex and without fulness in the region of the pulmonary cone. The aortic knob was visible to the left of the sternum. In the left anterior oblique position the pulmonary window seemed to visualize well. The electrocardiogram showed decided axis deviation to the right. The red blood cells numbered 9,880,000 per cubic millimeter, the hemoglobin content was 24.8 Gm. and the hematocrit reading was 67.

Operation.—The operation was performed on September 27. Intratracheal cyclopropane and oxygen anesthesia was administered by Dr. Wm. O. McQuiston. The patient's color was much better under anesthesia than it had been previously.

The left pleural cavity was entered through the fourth interspace posteriorly, and adequate exposure was obtained with a ribspreader. The pulmonary artery was easily separated from surrounding structures. That portion of the aorta immediately distal to the arch was exposed. Six intercostal vessels required ligation. One of them was at least 2 mm. in diameter. The blood pressure remained unchanged during slow closure of the clamp on the aorta.

Incision in the pulmonary artery was made at an angle so that on completion of the anastomosis the vessels lay in normal relationship to each other without kinking the pulmonary artery.

The pulmonary artery was rather large and consequently wrinkled by the two encircling, holding ligatures. The bite taken in suturing the anterior lip of the pulmonary artery to the anterior lip of the aorta was too large. When the anastomosis was completed and the clamp removed, some constriction of the pulmonary artery was apparent. While this probably made little difference in the flow of blood through the pulmonary artery, it was a technical error. A palpable thrill could be felt in the anastomotic channel. The lung was reexpanded and the chest closed. The child received 300 cc. of plasma intravenously during the operative procedure. Her condition at the close of the operation was excellent. The operative time was two hours and forty minutes.

Postoperative Course.—The patient was returned to her room in good condition. She was placed in an oxygen tent. One hundred thousand units of penicillin was given in the intravenous fluids which she received following operation, and 30,000 units of penicillin was given every three hours for fourteen days postoperatively. On the evening of the operation she took sips of fluid, and on the next day she received a soft diet. Her condition was good. On September 30 it was noticed that dulness and diminished breath sounds were present over the left side of the chest. Inasmuch as the child seemed comfortable paracentesis was not performed. However, the signs in the chest gradually increased, and on October 3 she appeared tired but was not distinctly dsypneic. A chest tap was performed, and 240 cc. of grossly bloody fluid was removed. From this point on, recovery has been uneventful and the roentgenogram reveals that the chest has cleared. At the present writing, seventeen days after operation, she is walking freely about the ward. She has only a slight cyanotic tinge. She requests second helpings at each meal. She has gained 4 pounds (1.8 Kg.) since the operation.

On the third day following operation, her red blood cell count was 6,640.000 per cubic millimeter, the hemoglobin content 18.6 Gm., and the hematocrit reading 50.5. Subsequent examinations gave essentially the same results. The oxygen saturation of the arterial blood on October 11 was 77 per cent. The heart was examined daily following operation, and we were somewhat disturbed by the fact that the murmur seemed to be identical with that which had been heard previously. When the dressings were completely removed, however, a soft but distinct diastolic blow in addition to the systolic murmur was audible.

COMMENT

One of the possible advantages of this operation lies in the fact that we are free to make the anastomotic channel whatever size seems proper. Only years of experience and observation will determine the answer to that question. Thus far we have been guided by the work of Blalock and Taussig and have attempted to make the openings approximately the size of either the innominate or the subclavian artery. It may be that an additional field of usefulness of this operation will be

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in younger children in whom it is desirable to avoid sacrifice of the innominate artery.

In the first child, aged 21 months, the incision in the aorta measured 5/16 inch (8 mm.); in the other 2 children, aged 8 and 10 years, respectively, the incision measured approximately 6/16 inch (9.5 mm.). These figures do not represent the diameter of the anastomotic channel. An 8 mm. cut in a vessel will produce on expansion of that vessel an opening approximately 5 mm. in diameter, and a 9.5 mm. cut will produce an opening slightly less than 7 mm. (Formula: Length of the incision $\times$ 2 $\div$ 3.1416 = diameter of the opening.) Will the anastomotic channel enlarge as the child grows, or will it remain fixed? Work has been planned to answer this question. At present it seems logical to gage the size of the opening by the age, weight and degree of anoxemia of the patient.

Vascular surgeons agree that it is desirabe to suture all vessels intima to intima. However, from our experimental evidence we do not believe that in aortic pulmonary side to side anastomosis the complex technic of suturing intima to intima in the posterior row of sutures is necessary or desirable. Bleeding is less apt to occur from such a suture line between vessels which are opposed adventitia to adventitia. This fact is important in an anastomosis in which the posterior row of sutures is inaccessible after the anterior row has been completed. In 30 anastomoses on dogs and 3 on children bleeding from the posterior suture line was not present. Furthermore, we have found that intra-aortic pressure tends to oppose the inverted lips of the posterior row of sutures, leaving an almost negligible gap between the intimal edges. It is true that a running over and over stitch opposing adventitia to adventitia does expose more suture material to the flow of blood. This does not violate the principles of vascular surgery (Smith[5]).

Fig. 4.—Anastomotic channel between aorta and left pulmonary artery from a dog eighty-one days after operation; the aortic side.

The suture material and the anastomotic margins are covered with a layer of endothelium within twelve to twenty-four hours (Carrel and Guthrie,[6] Smith[7] and Horsley[8]). To date, in none of the animals which we have killed from one to eighty-one days following aortic pulmonary anastomosis have we found more than pinhead sized thrombi on the suture line. In fact, the anastomotic lumen of the dog killed after eighty-one days was entirely free from thrombi, and the silk was deeply covered with endothelium (figs. 4 and 5).

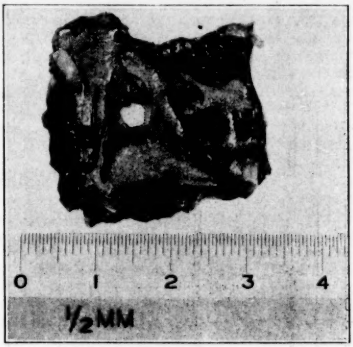

Fig. 5.—The pulmonary side of anastomotic channel in figure 4.

CONCLUSION

Only because we were backed by the fundamental principles set forth by Blalock and Taussig for the surgical relief of anoxemia in certain types of congenital heart disease did we have the courage to attempt this new operation. The operation is not a simple one. In attempting this new procedure it seemed only fair to choose those patients whose condition was such that without aid their future was hopeless. The 2 children who survived the operation have been tremendously benefited.

5. Smith, S.: Studies in Experimental Vascular Surgery, Surgery **18**: 627-643 (Nov.) 1945.

6. Carrel, A., and Guthrie, C. C.: Uniterminal and Biterminal Venous Transplantations, Surg., Gynec. & Obst. **2**: 266-286, 1906.

7. Smith, S.: A Soluble Rod as an Aid to Vascular Anastomosis, Arch. Surg. **41**: 1004-1007 (Oct.) 1940.

8. Horsley, J. S.: Surgery of the Blood Vessels, St. Louis, C. V. Mosby Company, 1915.

Epidemic Hepatitis.—During this war epidemic hepatitis has attained pandemic proportions. Large outbreaks have occurred in many parts of the world and in the armies of a number of nations. The pathology of this disease as observed in the Army of the United States during the epidemic of 1942 has been dealt with in previous papers. More recently an acute form of epidemic hepatitis of intense severity terminating fatally in less than ten days has become prevalent; this we have termed the fulminant form. In a new series of 196 fatal cases occurring between August 1943 and April 1945 which we have studied at the Army Institute of Pathology, over half fall into this category. By contrast, in the previous series not a single equally fulminant case was encountered, and only 1 was reported in the great Swedish epidemic of 1927; the usual duration of the fatal disease was then from four to six weeks; in other words, the course of fatal hepatitis was predominantly subacute. These divergences in duration reflect striking differences in the pertinent pathologic changes. Thus, in the more fulminant form the parenchyma of the liver is destroyed completely and uniformly, and this destructive process is accompanied with an intense inflammatory reaction. In the more subacute form seen in 1942 and also in about one fourth of the 1943-1945 series destruction of the liver is incomplete, the involvement characteristically not uniform, regenerative hyperplasis of surviving parenchyma leads to the production of much new tissue, and inflammation is less pronounced.—Lucke, Balduin, and Mallory, Tracy: The Fulminant Form of Epidemic Hepatitis, *Am. J. Path.* **22**:868 (Sept.) 1946.

CEREBROSPINAL CRYPTOCOCCOSIS

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Cryptococcosis is a subacutely or chronically manifested infection caused by a yeast called Cryptococcus neoformans which may involve the skin, lungs, lymph nodes or other parts of the body but which has a decided predilection for the brain, meninges and spinal cord.

The disease is also called European blastomycosis, torulosis and Busse-Buschke's disease. The causative yeast has about fifty synonyms, of which the best known are: Cryptococcus neoformans, Vuillemin, 1901; Saccharomyces, Busse, 1894; Saccharomyces neoformans, Sanfelice, 1895; Cryptococcus hominis, Vuillemin, 1901; Torula neoformans, Weis, 1902; Torula histolytica, Stoddard and Cutler, 1916; Cryptococcus histolyticus, Castellani, 1928; Cryptococcus meningitidis, Dodge, 1935; Debaryomyces hominis, Todd and Herrmann, 1936; Cryptococcus farciminosus, Rivolta; Saccharomyces farciminosus, Tokushige, and Endomyces farciminosus, Eberbeck. The present accepted terminology of Cryptococcus neoformans is suggested by the National Research Council (Manual of Clinical Mycology).[1] All these synonyms are based on a botanic classification which is still subject to many controversies.

The appearance of the cryptococcus in infected material is the same as in blastomycosis. If the material is not examined promptly a contamination of saprophytic cryptococcus may be present also. According to the military medical manual of mycology, the cryptococci are differentiated from other fungi by their single bud and wide capsule and their failure to produce a moldlike growth at room temperature. No distinctive reproductive process can be discovered in any of the yeastlike organisms. They adapt themselves entirely to their culture mediums and their environment, which adaptation even causes genetic changes in them, according to Brumpt.[2] This type of fungus lacks a constant morphologic character, and the morphology depends entirely on the medium, age and temperature. In a fresh growth at room temperature on Sabouraud's heavy mediums it is impossible to differentiate the torula from the blastomyces. It is in older cultures in which the mycelium is vanishing that the differentiation may be possible, but as a rule the plate interpretation is confusing. The pathologic and clinical picture is essentially the same in both blastomycosis and cryptococcosis, the most striking identity being shown in the meningitic type of the disease.

For these reasons it would be advisable to give one clinical name to all diseases caused by yeasts instead of adhering to the botanic classifications.

In 1937 Levin[3] analyzed 60 well authenticated cases of the meningitic type. He found that the average duration of the disease is five or six months. The prognosis is extremely poor; in the case on record longest the patient lived for five and a half years. Its clinical course may resemble any other type of meningitis; yet the ease of demonstrating the yeast cells in the spinal fluid on direct examination makes the differentiation rather easy.

From the Lawrence and Memorial Associated Hospitals.

1. Conant, N. F., and others: Cryptococcosis, in Manual of Clinical Mycology, Military Medical Manual, National Research Council, Division of Medical Sciences, Philadelphia, W. B. Saunders Company, 1944, pp. 111-126.
2. Brumpt, E.: Précis de parasitologie, Paris, Masson & Cie, 1927.
3. Levin, E. A.: Torula Infection of the Central Nervous System, Arch. Int. Med. **59**: 667 (April) 1937.

This disease occurs as a chronic one of solipeds and occasionally in cattle also, with a predilection for the lymph glands and lymphatic vessels. It is called epizootic lymphangitis. Benham[4] inoculated a saline suspension of the yeast intraperitoneally in mice. Lesions developed slowly. Gelatinous masses around the site of the injection and enlargement of the peritoneal nodes and brain tissue revealed the presence of the yeast.

In our series of mice inoculations, all the mice died within fourteen days and showed granulations containing yeast cells around the site of infection, but we have been unable to see distant metastases. The cause of death was apparently a rapidly developing toxemia.

No toxic products can be demonstrated in the cultures. No exotoxins or cutaneous hypersensitiveness are present, and agglutinins develop only in a low titer, no higher than 1:180 dilution. We believe that toxic products are formed in the body by the disintegration of free parasitic cells.

According to Hutyra,[5] an animal can be immunized in about fifty days, but until immunization takes place there is a hypersensitization present. The disease consists of a long chain of recurrences which show definite periodicity. They are released at intervals of eighteen to twenty-one days. Such periodicity can not be explained, unless the onsets are released by repeated reinfections or autoinfections. Complete recovery brings immunity. The road toward immunization is a series of attacks of lesser intensity. For practical purposes it seems safe to assume that if sixty days pass after the last recurrence and the patient shows signs of clinical well-being, he can be considered immune.

Martin and Smith[6] have used a complement fixation test in which the level of the antibody titer is used to indicate the degree of infection. A high antibody titer indicates an extremely unfavorable prognosis. A more favorable course can be anticipated when the complement fixation test is negative. However, we are unable to determine by this test whether or not immunity has taken place.

The source of the infection is unknown. Cases of human infection from animals have been reported occasionally; Negre[5] reported the case of a veterinarian who infected his thumb while operating on an infected horse. The veterinarian recovered after the intravenous injection of 6 Gm. of arsphenamine. Tokushige has reported several infections in China. The transmission of the infection by insects, according to Hutyra,[5] is principally only an incidental conveyance.

Cryptococcosis has been reported in children of less than 10 years of age and in adults of more than 70 years, but most of the cases occur in patients between the ages of 40 and 60. In a series of 60 cases of meningeal cryptococcosis 39 were men and 21 were women. All races are apparently equally susceptible.[1] There are relatively more cases reported in Algiers and China than in any other part of the world. The reason may be that the torulosis of horses is a common disease in these countries. To our knowledge there have not been reported any cases in which the disease was transmitted from man to man. Benham[4] showed that the pathogenic human strains differed morpho-

4. Benham, R. W.: Cryptococci, Their Identification by Morphology and by Serology, J. Infect. Dis. **57**: 255, 1935.
5. Hutyra, F., and others: Special Pathology and Therapeutics of the Diseases of Domestic Animals, translated by C. F. Marshall and C. M. Outley, London, Bailliere, Tindall & Cox, 1938, pp. 779-793.
6. Martin, D. S., and Smith, D. T.: The Laboratory Diagnosis of Blastomycosis, J. Lab. & Clin. Med. **21**: 1289, 1936.

logically, serologically and pathologically from the animal strains; yet we know that any yeast will show the most unusual changes in its biology, depending on the mediums and age.

It is thought that the fungus enters through the respiratory tract because in almost every case of cerebrospinal cryptococcosis the history of the patient reveals a mild but definite respiratory infection. Isolated lesions have been reported in the skin, mucous membrane and subcutaneous tissues. The meningeal form of cryptococcosis is always caused by a local infection which spreads to the brain and meninges. Since no sudden onset appears, it is probable that continuous synergenetic sensitization has to be present until clinical types of the organism develop.

In regard to the differential diagnosis, laboratory examination of the spinal fluid or other infected bodily secretions will rapidly and in an easy way demonstrate the presence of yeast cells. These smears should be unstained and diluted with a drop of distilled water. The staining methods are of no advantage, often making recognition even more difficult. The india ink method of staining gave us poor results. Probably the reason for this is that the india ink obtainable now is full of impurities and not a colloidal suspension. Therefore, it will not differentiate the yeast cells from the surrounding field.

The roentgenologic diagnosis may reveal a shadow in pulmonary infections without the formation of a cavity. The mediastinum is rarely involved. Just the opposite picture is seen in actinomycosis. The increased intracerebral pressure in chronic cases may produce atrophic changes in the inner table of the bone, but the bone itself is not invaded. Yet the roentgenogram will give no clue in the early case in which diagnosis is most urgently needed. Since there is no convincing evidence concerning the allergic status in cryptococcosis, we do not see any justification for skin testing as a diagnostic procedure.

REPORT OF CASE

History.—A white city housewife aged 38 was admitted to the Lawrence and Memorial Associated Hospitals on Dec. 27, 1945, complaining of vague headaches, nausea, slight cough and generalized muscular pains.

The familial, marital and past histories were noncontributory. The environmental conditions were excellent.

For about nine months before admission the patient felt occasional occipital headaches, which were rather dull and occurred in periodic spells of two to three days' duration. These headaches gradually increased in intensity and were occasionally accompanied by nausea and vomiting. She had a slight chronic cough most of the time and expelled a small amount of grayish sticky sputum. She had not consulted a doctor for any of these symptoms, but had taken different medicaments for her headaches, none of which gave any relief.

Five days before admission she went to a carol-singing, where she was exposed to windy, cold weather. The next day severe muscular pains in the neck and posterior region of the shoulders developed, which forced her to go to bed. Her condition was diagnosed as acute myositis and she was treated accordingly. Three days later the pains spread to muscles all over the body and were especially severe in the muscles of the calves. There was continuous nausea followed by vomiting immediately after the ingestion of food. Fever was not present at any time, although the patient complained of severe chills at the onset. Active motion increased the muscular pains and motion of the head induced vomiting. A day before admission she seemed confused and drowsy.

Admission and Examination.—The patient was admitted in the hospital with a tentative diagnosis of acute myositis and cyclic vomiting due to a possible trichinosis. On admission her temperature was 98.6 F., her pulse rate 60, her respiratory rate 25, and her blood pressure 120 systolic and 65 diastolic. She gave the impression of being extremely ill and showed signs of meningism (stiff neck). The neurologic examination did not show any particular changes, nor was any remarkable change seen in other organs.

On account of the stiff neck a spinal puncture was obtained under normal pressure and about 6 cc. of reddish spinal fluid was withdrawn. The laboratory examination revealed a decided xanthochromia; Pandy's test showed a trace of globulin; sugar was 27.5 mg. per hundred cubic centimeters and there were 5 lymphocytes. On counting the cells the technician observed the presence of numerous small cells resembling, but smaller than, the usual red cell. Under close examination these cells showed the typical morphology of yeast. A culture was made on Sabouraud's medium and after ten days a growth was obtained which has been identified as Cryptococcus neoformans. Other laboratory studies on the blood showed a hemoglobin content of 14.2 Gm. per hundred cubic centimeters, 4,770,000 red blood cells and 5,950 white blood cells, with 45 lymphocytes, 1 monocyte, 50 polymorphonuclears with 5 nonsegmenters and 4 eosinophils. Urinalysis revealed an acid reaction, a specific gravity of 1.025, a trace of albumin and a 4 plus reducing substance. The blood sedimentation rate by the method of Cutler showed a diagonal curve which reached 31 mm. in 60 minutes to indicate moderate activity. Roentgenograms of the chest showed increased bronchial markings but were otherwise negative.

Course at the Hospital.—The patient's temperature was flat, except for a moderate elevation of one or two days' duration at intervals of three weeks, corresponding to the exacerbation of the disease. Her course was one of steady improvement. Her muscular pains abated quickly, although dull headaches and nausea of varying degrees remained with her throughout her whole hospital stay. Weekly examinations of the spinal fluid revealed the constant presence of yeast, averaging about 20 yeast cells per millimeter. The patient was dismissed for ambulatory treatment on April 1, 1946.

In her home she resumed her housework and felt well except for occasional malaise and nausea during her periods of exacerbation. She gained 15 pounds (6.8 Kg.). The patient is not immunized as yet.

Treatment.—The treatment of this disease has proved unsatisfactory in the past. We believe that the danger lies in the toxic symptoms caused by the budding of the yeast cells, by which the toxins are most probably released. For this reason we tried a treatment which would "fix" the yeast cells and prevent the emanation of the toxins. To attain this we administered a continuous intravenous drip of 5 per cent alcohol, by which we hoped to obtain a 2 mg. blood level of the alcohol, which, of course, would stop the fermentation of yeast cells. The patient took this medicament cheerfully, and we believe it may have had something to do with her improvement.

Yeast cells are productive of para-aminobenzoic acid and for this reason we did not try sulfonamide compounds. Harford[7] failed to alter the course of the disease with massive doses of penicillin.

Since the patient's immune response was good, we tried massive doses (5 Gm. per day) of iodides. We also tried oxophenarsine hydrochloride, methylene blue and antimony compounds. None of these produced any noticeable effect. Hektoen's vaccine, immune serum and rectal instillations of ether were not tried in this case. Roentgen ray therapy was not tried.

SUMMARY

1. Yeast cells in cryptococcosis are readily recognizable in excretions. The specimen must be freshly examined and should be preferably unstained.

2. A solution of 5 per cent alcohol and dextrose administered intravenously is apparently a valuable adjunct in combating toxemia due to toxins released by budding cells.

7. Harford, C. G., and others: Treatment of Staphylococcic, Pneumococcic and Other Infections with Penicillin, J. A. M. A. **127**: 253 (Feb. 3) 1945.

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3. In case of recovery there is an immunity present, but until such immunity develops a state of hypersensitiveness exists which produces periodic attacks due to autoinfection.

4. There is a striking similarity, if not identity, in the clinical pictures of blastomycosis and cryptococcosis.

STREPTOMYCIN THERAPY IN INFECTION OF URINARY TRACT

Failure Because of Development of Resistance

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The development of resistance by bacteria to chemotherapeutic agents in the treatment of infectious diseases is becoming of increasing importance. With the wide usage of the sulfonamides and penicillin at present and probably of streptomycin in the near future, the problem of the development of fastness by organisms in the body during the period of treatment is a matter of great concern to the clinician. The manner in which organisms frequently become resistant to sulfonamide compounds is well recognized.[1] Development of fastness to penicillin has been observed [2] in some organisms during therapy but occurs much less frequently than fastness to sulfonamide compounds. Failure of organisms to readily develop a fastness to penicillin is probably one of the main reasons for the great effectiveness of this agent. With the newer antibiotic, streptomycin, however, the ease and speed with which organisms become resistant to it in vivo may prove to be a limiting factor in its wide usage. Although this new chemotherapeutic agent is still in its infancy, the development of resistance to it by organisms in the body during treatment has already been reported.[3]

In the following report 2 unrelated cases of infection of the urinary tract caused by Aerobacter aerogenes, a gram-negative coliform bacillus, are described, which were unsuccessfully treated with streptomycin. In both cases the ineffectiveness of streptomycin could be attributed to the development of resistance by the organisms during the course of treatment.

Streptomycin was secured through the courtesy of Dr. J. M. Carlisle of Merck & Co., Inc., Rahway, N. J.

From the Department of Bacteriology and the Department of Medicine, Temple University School of Medicine. On duty with United States Public Health Service (Dr. Ottenberg) and at Hahnemann Medical College (Dr. Brown).

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2. Rammelkamp, C. H., and Maxon, T.: Resistance of Staphylococcus Aureus to the Action of Penicillin, Proc. Soc. Exper. Biol. & Med. **51:** 386-389, 1942. Waisman, M., and Gates, J. S.: Topical Penicillin Treatment of Pyogenic Infections of Skin, Bull. U. S. Army M. Dept. **4:** 516-517, 1945. Hamilton, J. E.; Prandoni, A. G.; Evans, J. M., and Romansky, M. J.: Penicillin Therapy of Infections in Two Hundred and Twenty Patients: A Clinical and Bacteriologic Study, Surgery **19:** 186-219, 1946. Yow, E.; Avera, J.; Harrell, G. T.; Palmer, J. G., and Taylor, R. W., Jr.: Prediction of the Requirements Necessary for Effective Penicillin Therapy: Comparison of In Vitro and In Vivo Response to Penicillin in Acute and Chronic Infections of Varied Etiology, South. M. J. **39:** 236-245, 1946.

3. Buggs, C. W.; Bronstein, B.; Hirshfeld, J. W., and Pilling, M. A.: In Vitro Action of Streptomycin on Bacteria, J. A. M. A. **130:** 64-67 (Jan. 12) 1946. Youmans, G. P.; Williston, E. H.; Feldman, W. H., and Hinshaw, H. C.: Increase in Resistance of Tubercle Bacilli to Streptomycin: A Preliminary Report, Proc. Staff Meet., Mayo Clin. **21:** 126-127, 1946. Alexander, H. E., and Leidy, G.: Influence of Streptomycin on Type B Haemophilus Influenzae, Science **104:** 101-102, 1946.

REPORT OF CASES

CASE 1.—F. V., a man aged 28, was admitted to the hospital with fever, chills, sweats, spastic weakness of the lower extremities, urinary retention and failing vision. The history of illness dated back to 1935. Cultures of urine repeatedly disclosed a gram-negative bacillus later identified as A. aerogenes. Blood cultures were negative. A diagnosis was made of infection of the urinary tract secondary to cord bladder due to multiple sclerosis.

The patient showed temporary improvement following a course of penicillin therapy (160,000 units a day for six days), but a low grade fever persisted and cultures of urine continued to be positive for A. aerogenes. An indwelling catheter was left in place at all times, and the bladder was irrigated by continuous tidal drainage with acriflavine in a 1:3,000 solution. The culture of A. aerogenes was tested in vitro for susceptibility to streptomycin by a broth dilution technic and was inhibited by 1 microgram (1 unit) per cubic centimeter of culture medium. Therapy with this agent was started in an attempt to clear up the infection. Streptomycin (1 Gm., 1,000,000 units) was administered daily by continuous intramuscular drip and was continued for five days, during which the total dosage was 5 Gm. All other forms of therapy were discontinued during the course of treatment with streptomycin. The patient failed to experience any discomfort from the injections and at no time did any significant local reaction occur. Clinical improvement was not noted at any time during the administration of streptomycin; in fact, in general the clinical condition of the patient was poorer on completion of therapy with this agent.

Cultures of Urine and Susceptibility to Streptomycin

Time in Relation to Treatment	Isolation of A. Aerogenes	Susceptibility * to Streptomycin † Micrograms/Cc.
Before treatment	Many	1.0
After treatment started ‡		
6 hours after	Few	2.0
12 hours after	None	
18 hours after	None	
24 hours after	Moderate number	>1,000.0
2 days after	Many	>1,000.0
After treatment stopped		
1 day after	Many	>1,000.0
6 months after	Many	>1,000.0

* Case 1.
† Smallest concentration inhibiting growth.
‡ 1.0 Gm. per day for five days.

Cultures were done on six-hour specimens of urine during the first day of treatment and then daily on twenty-four hour specimens. Only the second and third six-hour specimens collected during the first day of treatment were sterile. All specimens subsequently collected contained A. aerogenes (see the accompanying table). Isolations of the organism made during and after treatment were saved and later tested for susceptibility to streptomycin. All isolations obtained twenty-four hours after therapy was instituted were resistant to 1,000 micrograms of streptomycin. Blood levels of the agent varied between 7 and 10 micrograms per cubic centimeter. Levels in the urine varied between 280 and 2,000 micrograms per cubic centimeter.

The patient experienced two subsequent bouts of spiking fever with chills. Two further courses of penicillin therapy were administered, during which tidal drainage with acriflavine was continued. Subsequent to ten days of normal temperature, the patient was discharged from the hospital about three months after admission. Improvement in the neurologic condition was not observed during hospitalization. A specimen of urine collected six months after discharge still showed A. aerogenes on culture.

CASE 2.—J. M., a man aged 55, had stones in the right kidney and recurring pyelitis of several years' duration. Surgical intervention was recommended but was not done. Two months before his death, the patient had lobar pneumonia, which responded successfully to penicillin therapy. On recovery, however, pyelitis recurred, and the patient became toxic, with a temperature of 103 F., chills, sweats and hiccups; the leuko-

cytes numbered 25,000. Blood cultures were negative but cultures of urine contained enterococci and many A. aerogenes.

The culture of A. aerogenes which had been isolated was tested for susceptibility to streptomycin, and growth was inhibited by 0.5 microgram (0.5 unit) per cubic centimeter of culture medium. Streptomycin therapy was started on the ninth day after the recurrence of pyelitis. Two grams of the drug (2,000,000 units) was administered the first day by continuous intramuscular drip and 1 Gm. per day thereafter for fourteen days, making a total dosage of 15 Gm. Some general improvement in the patient was noted, but fever persisted and the temperature never returned to normal. Streptomycin levels were not computed on blood or urine. Cultures of the urine one week after streptomycin therapy was discontinued contained many A. aerogenes. Growth of the organisms isolated at this time was not inhibited by 1,000 micrograms per cubic centimeter of broth. The patient died of sepsis ten days after a nephrectomy was performed.

COMMENT

It is apparent that the failure of streptomycin to control the infection of the urinary tract in the 2 cases reported herein was due to the development of resistance to this agent by the strains of A. aerogenes causing the infections. In case 1 the development of resistance to streptomycin was rapid and occurred during the first twenty-four hours of treatment. Because the patient in case 2 was treated at some distance from the laboratory, cultures were not made during the period of treatment; hence, unfortunately, the speed with which the organisms became resistant was not determined. There is little doubt that the resistant strains isolated in both cases were variants of the original susceptible cultures. The resistant variant in each case was identical with the parent strain morphologically, culturally and biochemically.

In a study of the development of resistance to penicillin by staphylococci, Demerec [4] concluded that development of resistance to this agent by staphylococci is the result of natural selection. Klein and Kimmelman [5] more recently came to the same conclusion concerning the development of the streptomycin resistance of shigella. According to the concept of these two workers, the resistant strains of A. aerogenes which were isolated in the cases reported above were present in the parent culture of each strain. Because they were present in such few numbers, however, they were not detected by conventional methods of susceptibility testing wherein small inoculums are tested. When treatment was instituted, the susceptible cells were immediately eliminated, leaving only the few resistant forms which multiplied rapidly until the entire population consisted solely of resistant cells. We are in accord with this reasoning in view of the rapidity with which resistance developed, a process which is more consistent with that of natural selection than with that of acquired resistance.

Proof that resistant cells were present in one of the original susceptible cultures was obtained by testing the susceptibility of a large population of the culture. A total of 5 cc. of broth culture of each strain of A. aerogenes was plated in a series of agar plates containing 500 micrograms of streptomycin per cubic centimeter of agar. Not a single colony developed on the plates inoculated with strain J. M. (case 2). On the plates inoculated with strain F. V. (case 1), however, two colonies developed which on subsequent testing were not inhibited by 1,000 micrograms of the drug. It appears that of the approximately 5 billion cells of this strain tested there were two resistant variants. It is obvious that if a smaller population had been tested these resistant variants would not have been detected. No doubt strain J. M. likewise has similar resistant variants, but still larger populations must be tested before they are detected.

It is significant that the resistant variants which were isolated remained permanently resistant. An isolation of A. aerogenes from patient F. V. (case 1) made six months after streptomycin therapy was discontinued was still resistant. Furthermore, all resistant strains stored in the laboratory on extract agar slants still retained their resistance nine months after isolation.

Streptomycin has not had sufficient clinical trial as yet to justify conclusions in regard to its future chemotherapeutic value. It appears at present, however, that it will be of value in the treatment of tuberculosis [6] and certain infections due to gram-negative bacilli.[7] It is evident, nevertheless, that the rapid development of resistance to this agent by organisms in the body under treatment is a serious problem which the therapeutist must bear in mind. It may become necessary for the laboratory to devise susceptibility tests of such a nature that the probability of an organism developing resistance will be predictable. It should not be assumed that all strains of A. aerogenes or other susceptible organisms will become resistant to streptomycin as readily as did those in the 2 cases reported. Doubtless bacteria differ in their tendency to give rise to naturally resistant variants as shown recently by Knop.[8] It is interesting to note that by transferring the two parent strains of A. aerogenes each daily in broth which contained increasing concentrations of streptomycin relatively few passages were required before the two became extremely resistant.

Until an answer is found to this problem it appears that large dosages of this agent should be used. It is conceivable in the 2 cases reported that if the entire dosage had been given in the course of one or two days the response might have been more favorable. Such intensive therapy would have tended to eliminate the few resistant variants as well as the susceptible forms. The answer to this problem may eventually be the therapeutic use of some other agent, such as penicillin or a sulfonamide compound, along with streptomycin. Combined therapy may prevent the appearance of such resistant variants to either agent.[9]

SUMMARY

In 2 cases of infection of the urinary tract due to Aerobacter aerogenes streptomycin therapy was unsuccessful. The ineffectiveness of this agent was due to the development of streptomycin-resistant variants of the two strains of A. aerogenes causing the infections. The resistant variants in both cases were over a thousand times more resistant than their susceptible parent cultures.

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Special Article

HISTORY OF THE AMERICAN MEDICAL ASSOCIATION

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CHAPTER 1. *The Organization Is Conceived*

(NOTE: *Following is the first chapter of a history of the American Medical Association, in process of development for publication in connection with the celebration of the Centennial of the American Medical Association in Atlantic City in June 1947.*

The general account of the history of the Association will be followed by individual histories of the various councils, bureaus, publications and other activities of the Association. The general account is written by the editor of THE JOURNAL. *Each of the other historical contributions will be by a member of the individual council, bureau or agency responsible and now associated with it or directly related to its work. Included will be photographs, signatures and a brief biography of each of the hundred presidents of the American Medical Association. This feature has been prepared by Dr. Walter L. Bierring.*

It will be impossible to publish all of the material in THE JOURNAL. *The complete work will be published in book form. It is hoped to have it available by the time of the annual session.*—ED.)

The first meeting of the American Medical Association was in May 1847 in the city of Philadelphia. The assemblage did not gather by any common impulse arising suddenly in the minds of a great number of men. The birth of the Association followed travail of many months; the pains, the jealousies and the love associated with its conception forecast the great career to be achieved by this extraordinary progeny.

A medical society was formed in New York in 1749, almost a hundred years previously. The first medical book to be published on the North American continent had been printed by the Spaniards in Mexico in 1570 and they had founded the first medical school in 1578. The only medical publication of the New England colonies in the seventeenth century was Thatcher's "Brief Rule," printed in Boston in 1677. John Shaw Billings in his notable "A Century of American Medicine" says there were at the commencement of the Revolutionary War but one medical book by an American author, three reprints and twenty pamphlets.

Before 1800 there were five good medical schools—those of the University of Pennsylvania (1765), Kings College (1767), New York, which became in 1792 the Medical Faculty of Columbia College, Harvard University (1782), the College of Philadelphia (1790) and the Medical School of Dartmouth College (1798). Small medical societies had been organized, the first in Boston in 1735 and others in New York, Philadelphia and New Haven County. State medical societies existed in New Jersey, Massachusetts, South Carolina, Delaware, New Hampshire, Connecticut and Maryland. The medical periodicals of the country were few in number and of small circulation, the first being the *Medical Repository* of New York, founded in 1797.

With the nineteenth century medicine began to make more progress through the development of interesting devices and new theoretical concepts. Advances made in physics and chemistry were reflected, as they are today, in medicine, but the modern scientific movement did not attain full proportions until well after the middle of the century. No doubt the discovery of anesthesia in 1846 was the most important single contribution to the advancement of medical science in those first fifty years of the nineteenth century. True, the period saw the introduction of vaccination against smallpox, the discovery of the stethoscope by Laënnec, the publication of Percival's "Code of Medical Ethics," the first ovariotomy, performed by Ephraim McDowell, the publication of the first United States Pharmacopeia (1820) and such amazing clinical contributions as Bell's description of the functions of the spinal nerve roots, Parkinson's description of paralysis agitans, Hodgkin's description of lymphadenoma, Beaumont's classic experiments on digestion, Basedow's description of toxic diffuse goiter and Oliver Wendell Holmes's essay on the contagiousness of puerperal fever. Rokitansky and Virchow had begun the fundamental studies in pathology which were to be the basis of a modern science of medicine in contrast to a century of medical art. Claude Bernard had already written a significant essay on the digestive function of the pancreas.

Then came 1847. In his "History of Medicine" Fielding H. Garrison lists as the most important accomplishments of that year Helmholtz's treatise on "Conservation of Energy," the introduction by Sir James Simpson of chloroform anesthesia in obstetrics, the Semmelweis discovery of the cause of puerperal fever, the invention by Carl Ludwig of the kymograph and the founding of the Royal Academy of Sciences of Vienna and of the American Medical Association in Philadelphia.

What better source could we ask for the history of the American Medical Association from its organization up to January 1855 than Dr. Nathan Smith Davis, who, more than any other man, may be credited with being the founder of the American Medical Association? He records the incidents in his book published in 1855 in Philadelphia. At that time he said:

> Of all the voluntary social organizations in our country, none are at this time in a position to exert a wider or more permanent influence over the temporal interests of our country than the American Medical Association. This assertion may startle the mind of the professional reader and call forth a smile of incredulity, nay of contempt, from the nonprofessional; but let both patiently follow me to the end and then judge. I am aware that the details on which I am about to enter may appear to some unimportant, to others tedious and, to all of the present generation, wanting in novelty and interest; but they will appear far otherwise to those who shall come after us and live when time shall have thrown his dimming veil over all the doings of our day.

During the fifteen years between 1830 and 1845 the number of medical colleges in the United States more than doubled. There was active rivalry and competition without restraint. Because of the commercial character of these medical schools, the promoters sought by shortening of the curriculum and by the establishment of easy terms of graduation to induce great numbers of students to enter and to pay the fees. Sixteen weeks was generally adopted as the length of the college term; in some schools, it was reduced to thirteen. In New England attempts had been made to improve on this wholly inadequate curriculum. In 1835, the Faculty of the Medical College of Georgia proposed that a convention be called of delegates from all the medical colleges in the United States with a view to standardizing upward. Some of the more influential schools in the Atlantic cities, as might have been anticipated, opposed this effort. But a cry arose again in the Med-

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ical Society of the State of New York at its annual meeting in February 1839. At that time a resolution declaring that the business of teaching should be separated as far as possible from the privilege of granting diplomas was adopted by a large majority.

Following the adoption of this resolution, Dr. John McCall of Utica offered a preamble and a resolution urging a national medical convention to be held in 1840 in Philadelphia with delegates from each state medical society and each medical school in the United States. The resolution was adopted, and all the necessary steps to make it effective were taken. Then neither the societies nor the schools of other states responded to the invitation. The evil persisted, and the tension accumulated during the years that followed. In 1844 a series of resolutions were offered by Dr. Alexander Thompson of Cayuga County and N. S. Davis of Broome County attacking the abuse of the procedure by which college faculties both taught and licensed medical students and attacking as well the brief course of education leading to the receipt of a diploma. In 1845 the discussions in the state society continued; but the pattern of thinking seems to have been as stereotyped as it is now whenever improved standards are urged in any branch of education. Those who wished to set up a high standard in New York were told that students would abandon the schools of New York for those of other states where the requirements were less. The statement was made again and again that the requirements in New York were certainly as high as those of other states. At the close of the debate in 1845 Dr. Nathan Smith Davis, urged by Dr. Alden March of Albany, introduced the resolution which follows and which may be considered the first step toward the formation of the American Medical Association as we know it now:

WHEREAS, It is believed that a national convention would be conducive to the elevation of the standard of medical education in the United States; and

WHEREAS, There is no mode of accomplishing so desirable an object without concert of action on the part of the medical colleges, societies and institutions of all the states; therefore be it

Resolved, That the New York State Medical Society earnestly recommends a national convention of delegates from medical societies and colleges in the whole Union to convene in the city of New York on the first Tuesday in May in the year 1846 for the purpose of adopting some concerted action on the subject set forth in the foregoing preamble.

Resolved, That a committee of three be appointed to carry the foregoing resolution into effect.

The introduction of this resolution was followed by a discussion in which the older members of the society told how similar movements had failed in the past. Others said that the whole project was impracticable if not positively utopian. But Nathan Smith Davis persisted and urged those who agreed with him to persevere until they achieved success. The resolution was adopted; a committee consisting of Drs. Nathan Smith Davis of Binghamton, James McNaughton of Albany and Peter Van Buren, secretary of the state society, were named to make the resolution effective.

To what, then, can be ascribed the success of this resolution compared with the repeated failures of previous attempts to found a national medical society? The persistence and courage and initiative of Dr. N. S. Davis were the essential factors. Dr. Nathan Smith Davis soon after his return to Binghamton sent a copy of the preamble and resolutions to every college and medical society known to exist in the United States and to many prominent physicians in sections of the country in which such societies had not yet been formed. The proposal met with favor from societies, colleges and individuals by whom it was received except the colleges located in Philadelphia and in Boston. These schools respectfully declined to take any part in the proposed convention. The medical periodicals of the country, however, commended the holding of such a convention. Dr. Davis continued indefatigably to urge support of his project.

The New York State Medical Society in February 1846 appointed sixteen delegates to attend and accepted the invitation of the Faculty of the New York University to hold the convention in their building in May of that year. With an organizational genius equal to the best modern technics, Dr. N. S. Davis sent more communications to the medical periodicals of the country during 1845. He was aided by similar communications from Dr. Luther Ticknor, then president of the Medical Society of the State of Connecticut. Whereas Dr. Davis emphasized particularly the improvement of medical education, including higher standards of preliminary education, the quality of teaching, the qualifications required for a diploma and continuous stimulus of the medical profession, Dr. Ticknor urged quality in medical practice and graduate education and deprecated particularly the rivalry among the medical institutions and leading medical men as to who should furnish "not the most valuable and best wrought article, but who shall furnish the greatest quantity." So strong indeed were the language and the assertions of Dr. N. S. Davis that they naturally stimulated some opposition.

Professor Martyn Paine of the medical department of New York University delivered an address called "A Defense of the Medical Profession of the United States," published it and circulated it widely throughout the country. In this address he attacked the state medical society, accusing it of playing politics in its desire to extend the curriculum and said:

There is an aristocratic feature in this movement of the worst omen, however the spirit, by which it is prompted, may belong to the agrarian policy. It is oppression toward the poor for the sake of crippling the medical colleges.

This address had the strange effect of causing the Philadelphia physicians to withdraw their previous rejection of the invitation to New York on the grounds that "the very singular address of Professor Paine" convinced them that the "convention was not designed particularly to benefit the medical schools in the city of New York." As a result, the society was convened in Philadelphia and twelve eminent physicians were appointed to attend the meeting in New York. In his book Dr. N. S. Davis philosophizes on this incident as exemplifying the necessity for frequent contacts between leaders in order to overcome distrust and bring about mutual respect. He says:

It would be difficult to illustrate more strikingly that sleepless jealousy which pervaded more or less all our medical schools, springing into existence in rapid succession, as they had done; or the necessity of some general organization, by which the representatives of all should be brought into personal contact and intercourse, until mutual distrust should give place to mutual respect and a common object.

THE ORGANIZATIONAL MEETING

On Tuesday, May 5, 1846 the delegates and members of the medical profession from different parts of the United States assembled in the hall of the Medical Department of the New York University. Dr. Edward Delafield of New York was in the chair. Dr. William P. Buel of New York was appointed secretary. On motion a committee of one from each state represented in the convention was appointed to nominate officers

for the convention. This committee unanimously agreed to propose for president Dr. Jonathan Knight of New Haven, for vice presidents Dr. John Bell of Philadelphia and Dr. Edward Delafield of New York City, and for secretaries Dr. Richard D. Arnold of Savannah, Ga., and Dr. Alfred Stillé of Philadelphia.

The Committee on Credentials' reported that 119 delegates had sent credentials and that 80 of these were present at the opening of the convention. They represented medical societies and colleges from sixteen different states. No sooner had the officers been elected and conducted to their respective places than there occurred one of the most extraordinary political moves that has ever marked a medical assemblage anywhere in our country, which, incidentally, is widely known for the exciting activities of its democratic assemblages. Dr. Gunning S. Bedford, a colleague of the previously mentioned Professor Martyn Paine, arose and, after some general remarks as to the benefits of a general convention of medical men, introduced a resolution to the effect that the assemblage had failed in representation from half the United States and from a majority of the medical colleges and that therefore "this convention adjourn *sine die*." The proposition was immediately seconded by one of his associates and naturally took the convention by surprise. There were two minutes of silence. The question was called for and a vote being taken gave 2 voting "Yes," namely Dr. Gunning S. Bedford and his colleague Dr. G. S. Pattison, and 74 "No."

Since many of the members considered the resolution an insult, motions were promptly made to withdraw the convention from the hall of New York University. This was followed by explanations and apologies by Drs. Bedford and Pattison; then the proposed withdrawal was laid on the table.

A committee of nine was appointed—headed by Dr. N. S. Davis—to bring the subject of medical education before the convention in the form of distinct proposals suitable for discussion and action and to report at the next meeting. On the following day this committee presented to the convention the following four proposals:

First. That it is expedient for the medical profession of the United States to institute a National Medical Association.

Secondly. That it is desirable that a uniform and elevated standard of requirements for the degree of M.D. should be adopted by all the medical schools in the United States.

Thirdly. That it is desirable that young men, before being received as students of medicine, should have acquired a suitable preliminary education.

Fourthly. That it is expedient that the medical profession in the United States should be governed by the same code of medical ethics.

The committee also recommended the appointment of a committee of seven "to prepare and issue an address to the different regularly organized medical societies, and chartered medical schools in the United States, setting forth the objects of the National Medical Association, and inviting them to send delegates to the Convention to be held in Philadelphia in May 1847."

The proposals were adopted by the convention and the committees were appointed.

At this same meeting Dr. Davis tried to introduce—and received support for—a resolution to the effect that the union of the business of teaching and licensing in the same hands is wrong in principle and liable to abuse in practice. The resolution was opposed by Dr. Isaac Hays and by other members of the committee and finally was presented to the convention. Here it was fully discussed, and motions were made to lay it on the table or to refer it to various committees, but the spirited defense by Dr. N. S. Davis resulted finally in reference of the resolution to a special committee of seven, with instructions to report it at the meeting to be held in Philadelphia in May 1847.

This assemblage of physicians did not lose the opportunity to make progress toward greater efficiency in the science of medicine. On motion of Dr. John H. Griscom, committees were appointed to report on the most efficient measures for effecting a registration of births, marriages and deaths and toward the establishment of a nomenclature of diseases adapted to the United States.

Dr. N. S. Davis, looking over this epoch-making meeting in retrospect, expresses his surprise at the disparity of representation from states located equally distant from the place of meeting. New Jersey, for instance, had only two delegates, Maryland only one and Georgia only one. Indiana and Illinois had only one delegate each, so that more than half of the entire number present represented the state of New York. Eleven medical colleges were represented, which were only one third of the whole number in the United States. Again in retrospect, Nathan Smith Davis was disappointed by the absence of those to whom the medical profession had been accustomed to look as leaders in all important professional matters. He calls attention to the absence of such men as Warren, Mussey, Stevens, Chapman, Drake. Later most of these were to become quite active in the work of the medical association and some of them were elected to the presidency.

(To be continued)

Clinical Notes, Suggestions and New Instruments

ACUTE INFECTIOUS LYMPHOCYTOSIS IN AN ADULT

Review of Literature and Report of Case

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Acute infectious lymphocytosis is a clinical entity characterized by a benign relative and absolute increase in the number of mature lymphocytes. This condition was first described by Smith [1] in 1941. He expressed the opinion that the group of cases reported by Reyersbach and Lenert [2] and that by Wilson and Cunningham [3] were examples of this disease rather than of infectious mononucleosis, because there were no significant clinical signs or symptoms in any of these cases. Thelander and Shaw [4] also reported 2 cases that should have been classified as acute infectious lymphocytosis. Duncan [5] reported a case of infectious lymphocytosis that presented a definite symptomatology and Smith [6] recently reported 4 cases in which he considered the disease to be both infectious and contagious. Birge and Hill [7] reported a differentiation between leukemia, mono-

1. Smith, C. H.: Infectious Lymphocytosis, Am. J. Dis. Child. **62:** 231-261 (Aug.) 1941.
2. Reyersbach, G., and Lenert, T. F.: Infectious Mononucleosis Without Clinical Signs or Symptoms, Am. J. Dis. Child. **61:** 237-244 (Feb.) 1941.
3. Wilson, C. P., and Cunningham, R. S.: Consideration of Supravital Method of Studying Blood in Cases of Mononuclear Cell Response, Folia haemat. **38:** 14-29 (March) 1929.
4. Thelander, H. E., and Shaw, E. B.: Infectious Mononucleosis with Special Reference to Cerebral Complications, Am. J. Dis. Child. **61:** 1131-1145 (June) 1941.
5. Duncan, P. A.: Acute Infectious Lymphocytosis, Am. J. Dis. Child. **66:** 267-271 (Sept.) 1943.
6. Smith, C. H.: Acute Infectious Lymphocytosis: Specific Infection, J. A. M. A. **125:** 342-349 (June 3) 1944.
7. Birge, R. F., and Hill, L. F.: Acute Infectious Lymphocytosis, Am. J. Clin. Path. **15:** 508-512 (Nov.) 1945.

nucleosis and pertussis. They stated that the only change observed in the aspirated bone marrow was a slight increase in small lymphocytes, and that immature cells appeared in the peripheral blood in acute leukemia but not in acute infectious lymphocytosis. For the diagnosis of pertussis in the absence of characteristic physical observations, bacteriologic studies

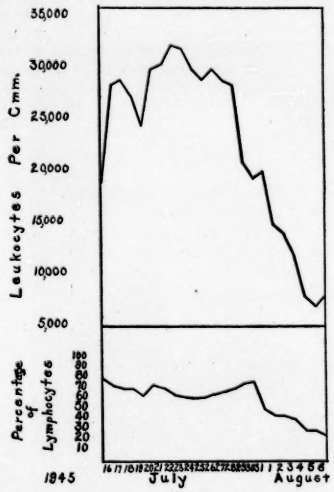

Chart 1.—Hematologic data; increase in the number of mature lymphocytes.

should be an aid, since the lymphocytic response to infection produces fewer cells than are apparent in acute infectious lymphocytosis.

All the cases which were reported occurred in children under the age of 9, until Duncan [8] in 1945 reported 2 cases occurring in young adults. The purpose of this report is to present a case also which occurred in an adult.

REPORT OF CASE

History.—A man aged 29, a recruit in a Naval Training Center, reported to the dispensary on July 16, 1945 complaining of a moderately severe pain in his right side which occurred after his training on the obstacle course. He received diathermy and salicylates for the next three days with but slight improvement, and the pain had shifted to his right hip. A white cell count, a urinalysis and a roentgenogram were requested, and the laboratory reported a normal urinalysis and a white blood cell count of 19,200 with a differential count of 80 per cent mature lymphocytes, 18 per cent neutrophils and 1 per cent each of eosinophils and basophils. Because of the hematologic observations he was admitted to the dispensary for observation.

Several days before his induction into the service on July 5, 1945 the patient noted a rash that had occurred below the belt line and covered the lower part of the abdomen, both hips, thighs and legs. Otherwise, the past history was noncontributory.

Physical Examination.—On physical examination, the patient was a well developed, well nourished white man who appeared much older than his stated age of 29. The temperature, pulse rate, respiratory rate and blood pressure were normal. The rash which was still present on his hips, thighs and legs consisted of a symmetric red maculopapular eruption, grouped together in places to form irregularly shaped lesions which became confluent, especially over the tibial surfaces. Itching was absent. The head, neck, chest and abdomen were normal. The lymph glands were not enlarged, and the spleen and liver were not palpable.

Laboratory Data.—Roentgenograms of the chest, pelvis and femurs were negative. Urinalysis was normal and the heterophil agglutination tests were positive in a dilution of 1:8. The blood platelet count was normal as was the electrocardiogram. The sedimentation rate was 8 mm. (Cutler method). Repeated determinations of the erythrocyte count which averaged 4,630,000 and the hemoglobin content which averaged 14.8 Gm. were well within normal limits. The proportion of large mononuclear cells never exceeded 3 per cent. The bleeding and clotting times of the blood were normal. The only significant hematologic observation was the increase in the number of mature lymphocytes as shown in chart 1.

Course.—While in the dispensary the patient did not have any complaints. The rash disappeared two days after admission, and he was returned to duty on Aug. 6, 1945. Eleven days later on Aug. 17, 1945 he was readmitted to the dispensary because of a mild infection of the upper part of the respiratory tract—headache, sore throat, cough and an elevation of temperature to 101 F. without other abnormal observations. His condition improved immediately, and he was returned to duty about one week later. The hematologic data during this time and at subsequent dates are shown in chart 2.

The patient finished his "boot training" and after he returned from his "boot leave" a complete physical and laboratory examination on Oct. 17, 1945 failed to reveal any abnormalities.

COMMENT

Smith [6] recently summarized the data for the establishment of acute lymphocytosis as a specific entity and differentiated it from infectious mononucleosis, acute lymphatic leukemia and miscellaneous infections associated with a lymphocytosis.

Most of the reported cases have been in children until Duncan [8] reported 2 cases occurring in young adults. In this same report, Duncan had a case in which there was a morbilliform rash lasting for four days during the first week of the disease. In this case the rash which was present lasted about twenty-one days. Because of this rash, a diagnosis of infectious mononucleosis was seriously considered, but a careful clinical, hematologic and serologic study failed to substantiate this diagnosis and corroborated the factors of differentiation which were stressed by Smith.[6]

In most of the cases, including this case, reported in the literature, the disease is uncomplicated and has a uniformly

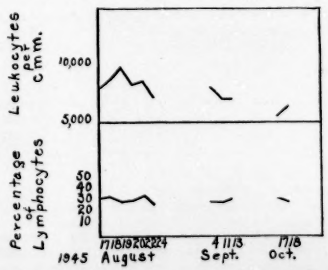

Chart 2.—Hematologic data during and subsequent to second hospitalization.

favorable outcome. The clinical manifestations are usually mild or absent, or if severe they are of short duration. In none of the cases was there lymphadenopathy or splenomegaly, and in all instances the heterophil reaction was negative. The maximum white cell count was 49,200 with 88 per cent lymphocytes. A characteristic feature in all cases, including this one, is either

8. Duncan, P. A.: Acute Infectious Lymphocytosis in Young Adults, New England J. Med. **233**: 177-179 (Aug. 9) 1945.

the total absence of symptoms and physical signs or the short duration of mild symptoms and signs with the hyperleukocytosis continuing for a period of approximately three to five weeks. In some cases pain is present and may represent a striking symptom, and if it is, abdominal surgical intervention may result. In this case the pain was moderately severe but was never considered a basis for surgical intervention.

Smith [6] in his latest report stated that the disease is both infectious and contagious and has a possible incubation period of twelve to twenty-one days. In this case several friends of the patient from his company were questioned and examined but did not reveal any abnormality, particularly from the hematologic examination.

SUMMARY

1. A case of acute infectious lymphocytosis has occurred in a young adult.

2. A rash which accompanied the infection is described as similar to that previously reported for the first time in conjunction with this disease.

3. A review of the present literature on acute infectious lymphocytosis indicates that the disease is infrequently encountered.

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PROGERIA WITH NANISM AND CONGENITAL CATARACTS IN A FIVE YEAR OLD CHILD

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Detroit

Progeria with nanism is infrequently encountered in practice, and its association with congenital cataract is most unusual.

The following is a case report of this disease associated with congenital cataracts.

REPORT OF CASE

W. H., a boy aged 5, was seen March 27, 1944, at the request of Dr. E. Alford of Belleville, Mich.

He was born two months prematurely, on July 27, 1938. Through the kindness of Dr. Otto Grob, I was furnished with the important points taken from his own records and those of the Children's Hospital of Michigan.

The weight at birth was 3 pounds 2 ounces (1,366 Gm.) and the length was 44 cm. The circumference of the head was 25 cm. The nose was pointed. The infant was discharged on September 15 and readmitted October 24 because of diarrhea and difficulty with feeding. He was given protein, calcium lactate, percomorph and ammonium citrate and green iron.

Comparison of Normal Measurements With Those of Patient

	Measurements in Cm.	
	Normal	Patient
Head	52.0	47.0
Chest	48.0	46.3
Waist	52.0	44.0
Span	105.0	94.0
Upper	59.0	50.8
Lower	49.5	45.7
Height	109.0	96.5
Weight	18.0 Kg.	12.0 Kg.

Dr. Davies, the ophthalmologist, who saw the infant in consultation summarized the observations as follows: The external eyes were negative except for a bluish tint to the scleras and shallow anterior chambers. The tactile tension was normal. Both lenses showed decided cataractous changes through undilated pupils. Only a faint fundus reflex was seen. The diagnosis was bilateral congenital cataracts.

The roentgenologic report disclosed that the long bones were relatively long and thin with a rather delicate cortex, and except for the humeri the cortex was not reduced enough for an absolute diagnosis of fragilitas ossium. The calcification of the cranial bones was delicate. The chest was normal.

On October 30, Dr. O. Grob made note of bilateral congenital cataracts. A week earlier, on Oct. 24, 1938, the hemoglobin level had been 9.3 Gm. per hundred cubic centimeters; erythrocytes 3,060,000, and leukocytes 6,100, of which 84 per cent were lymphocytes. The Kline test was negative.

When Dr. Grob saw the patient again on Oct. 30, 1939, he weighed 5,800 Gm. Dr. Grob made the following observations: (1) Very small; (2) congenital cataract, bilateral; (3) marked nasal obstruction; (4) low mentality? and (5) child has blue spells and holds his breath.

The teeth came in slowly when the boy was 3 years of age; when he was seen at the age of 5, they were small, undeveloped and had a well defined deposit of calcium on the crowns.

Fig. 1.—Front view of patient; typical characteristics of progeria.

He was mentally retarded, but the intelligence quotient was not determined. He used only one or two words at a time when speaking. He did not sit up alone until the age of 16 months. He was unusually hungry, but despite this his growth and weight were retarded. He walked soon after learning to sit up.

At the age of 3, he began to play the piano without having had lessons and played such numbers as Song of India and Turkey in the Straw. The mother said he could play any song after hearing it once. He was constantly drooling. He was impish and mischievous. He frequently held the flat of his right hand in front of his eyes and with a rapid motion kept the hand moving up and down.

Dr. F. Bruce Fralick of the University of Michigan Hospital reported on the patient as follows:

W. H. was first seen in the clinic on June 2, 1942. At this time, diagnoses were made of aphakia of the left eye and nystagmus, congenital cataract of the right eye and left divergent strabismus. On July 1, 1942, needling of the congenital

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cataract was performed on the right eye. The postoperative course was uneventful and on July 15 the eye was seen to be quiet, with the cortical material dissolving satisfactorily. There was a thin secondary cataract present with one or two small posterior synechias. Fundus details were not clear at this time. He was given a prescription for plus 10.00 sphere for each eye with a plus 2.50 added for near vision. He has not been seen in the clinic since that time.

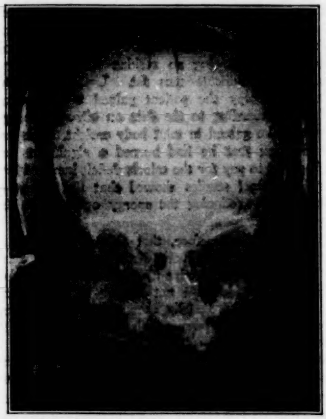

Fig. 2.—Roentgenogram of skull, anteroposterior view; incomplete closure of sagittal and lambdoidal sutures.

The past history disclosed that the patient had none of the usual childhood diseases. The family history indicated that the father was living. His height was 76 inches (193 cm.) and his weight 165 pounds (74.8 Kg.). The mother was

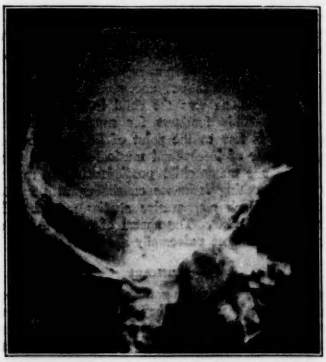

Fig. 3.—Roentgenogram of skull, lateral view.

living and her height was 64 inches (162.56 cm.) and her weight 120 pounds (54.4 Kg.) She had had a thyroidectomy for an adenoma of the thyroid. A paternal uncle was, like the father, 76 inches (193 cm.) in height. A paternal cousin of the patient also was of the same height and weighed 289 pounds (131 Kg.). There were three brothers, one of whom grew "too fast." The mother's father was 72 inches (182.88 cm.) in height.

The physical examination showed a boy who had a definitely senile appearance, typical of progeria (fig. 1). The face had the characteristics of a "newly hatched bird." The hair of the scalp was sparse and blond, with baldness of the frontal area. The veins of the temporal area were prominent. The eyebrows were poorly developed and were almost totally absent. The eye lashes were absent. The upper part of the ears protruded from the head; the lower part was flat.

The blue eyes showed a constant horizontal nystagmus which was doubtless congenital. The left eye showed aphakia. The right eye displayed a left divergent strabismus.

The nose was aquiline in appearance; the septum was deviated. The mouth was small and purselike. The boy drooled a great deal. The teeth were unusually small and carious and had a thick white deposit on them. The hard palate was of the high arched cathedral type. The tongue was normal in appearance. The tonsils were large. The cervical glands were enlarged. The thyroid was small. The chest was small and asthenic. The lung sounds were normal.

The heart was not enlarged, but a loud systolic murmur was heard at the apex. The abdomen was prominent; abnormal masses were not felt. Umbilical hernia was not present. The testicles were high up in the inguinal canal. The penis was small. Pes planus was present. The skin of the face was taut and dry, as was the skin of the body. The fingers and toes were small. The patellar reflexes were exaggerated. A questionable bilateral Babinski reflex was present. The accompanying table gives the patient's measurements.

Fig. 4.—Roentgenograms of hands and wrists; osteoporosis of bones.

Roentgenograms of the skull, hands and wrists revealed the following data: The skull on examination showed that the fontanel was closed although the sutures, both sagittal and lambdoidal, were not completely fused. There was a metopic suture of the frontal bone (figs. 2 and 3).

Films of the hands and wrists revealed no material disturbance in epiphysial development, but there was definite disturbance in the bony architecture, particularly of the phalanges and metacarpals. The bones were osteoporotic (fig. 4).

The blood count was hemoglobin 78 per cent (Sahli), red blood cells 4,350,000 per cubic millimeter and leukocytes 11,450. The differential count was polymorphonuclear neutrophils 72 per cent, small lymphocytes 27 per cent and large lymphocytes 1 per cent. The results of urinalysis were normal. No blood chemistry studies were made, and the observations are therefore clinical in nature.

The patient was placed on a regimen of methyl testosterone 10 mg. per day, and on July 10 his height was 40 inches (101.6 cm.) and his weight was 30 pounds (13.6 Kg.). He was continued on this therapy, and on Jan. 6, 1945 his height was 41.4 inches (105 cm.) and his weight was 35 pounds (15.9 Kg.). He continued the testosterone therapy, and by January 6 the testicles had descended into the scrotum. According to his mother he seemed brighter and talked more

but was impish and mischievous. In the office he was constantly on the move, taking objects from the examining table and turning the door knob. On November 26 his height had reached 45 inches (114.3 cm.) and his weight 38 pounds (17.2 Kg.). This represents a gain of 17.8 cm. in height and 5 Kg. in weight within a period of eight months.

COMMENT

Progeria with nanism is a rare disease. It has been termed Hutchinson-Gilford disease. Recently Thannhauser [1] described Werner's syndrome (progeria of the adult) and Rothmund's syndrome. Thannhauser's review is an extensive and comprehensive one and covers all features of these syndromes. In the differential diagnosis between diseases related to Werner's syndrome (progeria of the adult) and Rothmund's syndrome he considers progeria of children with nanism.

He lists some of the characteristics of progeria of children with nanism as follows: "Progeria of children (Hutchinson-Gilford's syndrome), also called 'nanism senile' or 'progero nanie,' is a disorder which develops from a few months to three years after birth. In the cases reported the children were normal at birth. There was no history of familial occurrence of this disorder or of the interrelationship of the ancestors. The main clinical features observed almost uniformly in all cases were as follows: All the children with progeria looked alike. The published photographs look like the pictures of twins.

"All patients were dwarfed in stature. The skull was large in comparison with the face. The frontal and parietal bones were unduly prominent. The fontanels closed early. The scalp hairs were present at birth but became grayish and scarce, and completely disappeared in the course of the disease. There was either very little or no development of the eyebrows. The eyelashes were rare or absent. The faces of these children resemble those of newly hatched birds."

In his comment Thannhauser [1] said: "There is a certain similarity in the features of 'Werner's syndrome' and 'progeria with nanism' in children. The cases exhibiting Werner's syndrome are short, almost dwarfed in stature. In progeria of children the patients are definite dwarfs. In both syndromes the extremities are short and the abdomen disproportionately large. The fingers and toes are short, and the joints of the extremities are deformed in both instances. The skin is atrophic and taut on the extremities. The panniculus adiposus of the forearm and lower legs is poorly developed as are the muscles, in both disorders. The lack of hair is more pronounced in progeria of children than it is in Werner's syndrome. Sexual retardation is present in both syndromes. Diffuse arteriosclerosis, osteoporosis and the premature senile appearance are the most impressive features present in Werner's syndrome, as well as in progeria of children. The autopsy findings in both syndromes are diffuse arteriosclerosis and no definite changes in endocrine organs. Progeria of children, however, differs from Werner's syndrome as follows: (1) There is no familial occurrence. (2) There are no pressure ulcers of the skin. (3) There are no cataracts. (4) The abnormal features develop in early childhood in progeria of children, whereas in Werner's syndrome they become evident in the second decade of life.

It is suggested that progeria of children and Werner's syndrome result from multiple germ plasm defects manifesting themselves at different ages in abiotrophic features of the genotypic kind."

In a personal communication Thannhauser stated that he did not find a case of progeria in children with cataract, in contrast to such observations in progeria of the adult. He agreed that the case herein reported is one of progeria.

Talbot and his associates [2] gave a comprehensive report of a case with metabolic studies. This case came to autopsy. The summary and conclusion were as follows: "A 7½ year old boy with typical progeria was studied. The life history and the clinical and postmortem studies failed to explain the unique appearance, the dwarfing and the loss of subcutaneous tissue characteristic of this disease.

Metabolic studies revealed that the patient ingested and assimilated a quantity of food adequate for the maintenance and growth of normal children of similar body weight. It appeared, however, that all the calories in the diet were used to meet the basal and intermediary requirements of energy metabolism, thus leaving no residue for growth or for the accumulation of subcutaneous fat. Under the influence of testosterone therapy the patient gained a greater weight of musculature, according to the data on nitrogen and potassium balance, than he gained in total body weight. This was interpreted to mean that he had burned a significant amount of stored body fat to pay for the caloric deficit incurred by building muscle. The final studies showed that the patient could be made to gain by reducing the energy output with the aid of thiouracil.

It is concluded, therefore, that this patient with progeria was suffering from a metabolic disturbance which was characterized chiefly by an excessive utilization of calories for energy metabolism and which did not appear to be due to hyperthyroidism as it is ordinarily encountered in children. As a consequence of the hypermetabolism, even when the patient was assimilating a good diet, few if any calories were available for growth. It may be profitable to search for a similar disturbance in other types of patients who fail to gain or grow."

Thannhauser said that: "Werner, as well as Rothmund, suggested that we are dealing with a disorder of the ectodermal layer, since both skin and lens are derived from the ectoderm. Such a theory is not substantiated by the multiplicity of symptoms, involving blood vessels, subcutaneous fat tissue, muscles and endocrine glands; especially not since we know the symptom complex of a heredofamilial disorder involving only the ectodermal layer—'ectodermal dysplasia of the anhydrotic and hydrotic type' which is entirely different from the syndrome under discussion." Thannhauser is inclined to the view that the occurrence of defects of the entire germinal plasm, recessive in heredity, was the most plausible explanation of the pathogenesis of Werner's as well as Rothmund's syndrome.

It is of some interest that in mongolism, as well as in progeria of the adult, cataract is not uncommon. Likewise, mongols are fond of music, as was the child in the case of progeria here reported. This fondness for music in persons whose mental caliber is low to the point of idiocy is in contrast to the large number of intellectual musical geniuses. As is well known, there are many child prodigies in the musical field. Music has a soothing influence on the agitated mental states of psychotics. Such comparative studies must be of intense interest to psychiatrists. The appeal of music to the emotions is, of course, an almost universally shared reflex.

SUMMARY

A case of progeria with nanism and congenital cataracts was observed in a 5 year old boy. Progeria with nanism and cataracts is not unusual in Werner's syndrome of the adult, but the association of cataracts is a rare condition as a congenital defect. The child was born prematurely and at birth weighed 1,366 Gm. His growth was retarded. The cataract of the left eye disappeared spontaneously when he reached the age of 3 years. He was mentally retarded but even at the age of 3 had an unusual talent for music. Methyl testosterone 10 mg. was given in daily doses which resulted in an increase of 17.8 cm. in height and 5 Kg. in weight within a period of eight months.

1. Thannhauser, S. J.: Werner's Syndrome (Progeria of the Adult) and Rothmund's Syndrome: Two Types of Closely Related Heredofamilial Atrophic Dermatoses with Juvenile Cataracts and Endocrine Features; a Critical Study with Five New Cases, Ann. Int. Med. **23**: 559-625 (Oct.) 1945.

2. Talbot, N. B.; Butler, A. M.; Pratt, E. L.; MacLachlan, E. A., and Tannheimer, J.: Progeria: Clinical Metabolic and Pathologic Studies on Patients, Am. J. Dis. Child. **69**: 267-279 (May) 1945.

Council on Foods and Nutrition

The Council on Foods and Nutrition has authorized publication of the following report.

JAMES R. WILSON, M.D., *Secretary.*

STANDARDS ESTABLISHED FOR ENRICHED MACARONI

Nineteen states and two territories have enacted legislation requiring enrichment of white flour, bread and rolls. Enrichment of flour elsewhere in the country is by the voluntary action of the millers; enrichment of commercial white bread and rolls at present is required by War Food Order No. 1. That this standardized addition of thiamine, riboflavin, niacin and iron to these products has done much to improve the quality of the American diet is indicated by analyses of foods consumed in 1943 and 1944. Consumption studies show that without enrichment of its bread and flour the per caput diet in the United States would provide considerably less than the recommended allowances of the nutrients added to bread and flour in their enrichment.

The Council on Foods and Nutrition of the American Medical Association has consistently opposed indiscriminate addition of vitamins and minerals to foods. It has, however, encouraged such enrichment in certain instances, notably in the case of cereal grain products which contribute importantly to the diets of significant groups of the population.[1] Macaroni clearly falls within the category for which enrichment is endorsed. While the average per caput consumption of macaroni and related substances, spaghetti, vermicelli and noodles, is small, some parts of the population consume these foods in quantities much larger than the average. Also many of these people are in lower income brackets and therefore not infrequently obtain the cheaper brands of flour which are unenriched. Thus the case for enrichment of macaroni and noodle products is reasonably strong, and on the basis of such evidence presented at public hearings the administrator of the Federal Security Agency now has established standards of identity for enriched macaroni, enriched spaghetti, enriched vermicelli and enriched noodles.[2]

The "order" on enrichment of macaroni and related products became effective Oct. 7, 1946. The "order" does not require enrichment of these foods but gives the macaroni manufacturer permission to enrich his major products; following the example of the milling and baking industries, he is expected voluntarily to use the opportunity to improve the nutritional quality of his products. The approximate cost of the vitamins and minerals which must be added in the preparation of macaroni products is about 12 cents per hundred pounds based on wholesale prices existing at the time of the public hearings. The cost is higher than enrichment costs for bread and flour for the reason that somewhat stronger enrichment is required to compensate for cooking losses; even so, the cost is very small.

Recently reported is a study of the nutritive value of the per caput food supply for the United States.[3] It covers the years 1909 to 1945 and reveals a great improvement in the nutritional quality of the diet in the recent war years. Largely responsible was increased consumption of milk, leafy green and yellow vegetables and citrus fruits. However, milk, vegetables and fruits contribute rather unimportantly to supplies of iron, thiamine and niacin, and the increased supply of them was credited in large part to enrichment of white bread and flour. The supply of other sources of iron, thiamine and niacin, such as meats, nuts and legumes, did not increase to any great extent.

The contributions to the better average diet attributed to enrichment of flour and bread were calculated by the government statisticians on the assumption that enrichment in 1944-1945 affected only 65 per cent of the total supply of flour and commercial bread and rolls. Estimates made by others are higher than this, but in any case a gap persists between the total amount of wheat endosperm, namely white flour and granular equivalents, which at present is consumed as food and that part of the total which reaches the consumer in products enriched by the manufacturer. A sizable amount of all wheat endosperm prepared for human consumption, not less than 5 per cent, goes into macaroni and related products, and enrichment of these products will represent another step in the direction of securing nutritional improvement for all foods derived from wheat endosperm.

1. Policies of the Council with Respect to the Nutritive Quality of Foods, J. A. M. A. **129**: 348 (Sept. 29) 1945.
2. Food and Drug Administration: Alimentary Postes, Definitions and Standards of Identity, Federal Register, July 9, 1946, p. 7520.
3. U. S. Dept. of Agriculture, Bureau of Human Nutrition and Home Economics, in cooperation with Bureau of Agricultural Economics: Nutritive Value of the Per Capita Food Supply, 1909-1945, Washington, D. C., June 1946.

Council on Pharmacy and Chemistry

NEW AND NONOFFICIAL REMEDIES

The following additional articles have been accepted as conforming to the rules of the Council on Pharmacy and Chemistry of the American Medical Association for admission to New and Nonofficial Remedies. A copy of the rules on which the Council bases its action will be sent on application.

AUSTIN SMITH, M.D., *Secretary.*

BACTERIAL VACCINE MADE FROM H. PERTUSSIS COMBINED WITH BACTERIAL ANTIGEN MADE FROM H. PERTUSSIS.—Pertussis Endotoxoid-Vaccine.—A suspension of Hemophilus pertussis, phase I organisms, in a solution of H. pertussis endotoxoid. The bacterial suspension is prepared after the technic of Kendrick and Eldering, and the endotoxoid by the Strean method.

Actions and Uses.—Pertussis endotoxoid-vaccine is recommended for the active immunization of individuals who are susceptible to pertussis. It is not intended for treatment of the disease or for the production of immunity once exposure has taken place.

Dosage.—For children 4 years of age and older a total amount of 6 cc. should be administered subcutaneously in four doses twelve to fourteen days apart as follows: 1 cc., 1.5 cc., 1.5 cc., 2 cc. For children under 4 years of age the dose may be reduced for the initial injection; a satisfactory dosage schedule consists of five injections, also at twelve to fourteen day intervals, as follows: 0.5 cc., 1 cc., 1 cc., 1.5 cc., 1.5 cc. After completion of the preliminary course it is customary to give a fortifying dose of 2 cc. (one injection) each year up to 5 years of age. When it is inconvenient to have the patient return for injections more than three times, three injections can be given at twelve to fourteen day intervals, as follows: 1 cc., 2 cc., 2 cc. Dosage intervals of one month may be preferred in cases in which the additional length of time required for vaccination is not objectionable.

AYERST, MCKENNA & HARRISON, LTD., NEW YORK

Pertussis Endotoxoid-Vaccine: 6 cc. vial (one immunization) and 24 cc. vial (four immunizations). Each cubic centimeter contains approximately 15,000 million killed H. pertussis (phase I) suspended in formalin-detoxified antigen (endotoxoid). Preserved with Merthiolate 1:20,000.

U. S. patent 2,371,002.

PENICILLIN OINTMENT (See THE JOURNAL, Nov. 2, 1946, p. 515).

The following dosage forms have been accepted:

E. R. SQUIBB & SONS, INC., NEW YORK

Penicillin Calcium Ophthalmic Ointment: 3.6 Gm. tubes. Each gram contains 1,000 units of penicillin calcium in a base consisting of petrolatum 40 per cent, beeswax 4 per cent, anhydrous lanolin 10 per cent and peanut oil approximately 46 per cent.

SCHENLEY LABORATORIES, INC., NEW YORK

Penicillin Calcium Ointment: 28.35 Gm. tubes. Each gram contains 1,000 units of penicillin calcium in a base consisting of white petrolatum, U. S. P., 78 per cent, mineral oil 3.5 per cent, beeswax 3.5 per cent and anhydrous lanolin, U. S. P., 15 per cent.

THEOPHYLLINE ETHYLENEDIAMINE (See New and Nonofficial Remedies, 1946, p. 395).

The following additional dosage form has been accepted:

H. E. DUBIN LABORATORIES, INC., NEW YORK

Aminophyllin Rectal Suppositories: 0.5 Gm.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

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SATURDAY, NOVEMBER 16, 1946

THE CENTENNIAL SESSION OF THE AMERICAN MEDICAL ASSOCIATION

The Centennial Session of the American Medical Association will convene in Atlantic City, June 9-13, 1947. By action of the House of Delegates the Board of Trustees established a special Committee on Centennial Celebration. That committee has cooperated fully with the Council on Scientific Assembly and with the Board of Trustees in arrangements for celebration of the centennial with a view to making it one of the greatest and most interesting medical assemblages ever convened.

Each of the scientific sections of the American Medical Association has been authorized to secure a distinguished speaker from abroad and to include also in its program a review of medical progress in the specialty concerned for the hundred year period. Dr. Edward L. Bortz, chairman of the Council on Scientific Assembly, has taken the responsibility with his Council for the development of a program of General Scientific Meetings, to be held on Monday afternoon and Tuesday morning and afternoon of the annual session. A distinguished guest from abroad has been secured for each of these. Each of the General Scientific Meetings will provide for the presentation of three papers constituting reviews of the advancement in the fields discussed, followed by panel discussions on such subjects as the modern management of heart disease, emergency surgery and antibiotics in therapy. The individual manuscripts for presentation will include such subjects as the use of radioactive products in medicine, advancement in the field of psychosomatic medicine, the use of antihistamine preparations, uterine bleeding, the modern management of cancer, nephrosis and nephritis, and the care of the skin of the elderly. THE JOURNAL will announce shortly the details of this program, with the names of the speakers and the subjects to be discussed.

The secretaries of the scientific sections have reported extraordinary interest in the program for the Atlantic City session, with more applications for places on the program than have been received since before the war. So great indeed has been the interest in some specialized topics that three special sessions will be held, devoted respectively to the history of medicine, to physical medicine and to allergy. These sessions are held as part of the temporary Section on Miscellaneous Topics.

Well under way as a significant feature of the celebration of the centennial is the utilization of Sunday, June 8, as a special public health day. A religious program is being arranged with representatives of the leading faiths of our country. This will be held in the great auditorium in Convention Hall and will no doubt be broadcast on one of the national chains. At the same time congregations assembled for religious services elsewhere throughout the nation will be given messages regarding the advancement of medical science and the improvement in the public health that have occurred during the hundred year period.

The division of motion pictures in the headquarters office of the American Medical Association is at present engaged in the development of two motion pictures dealing with the lives of the distinguished American physicians of the period concerned and with the evolution of motion pictures in medical teaching. The first public showings are contemplated for Monday evening, June 9, in the large auditorium.

So great is the demand for space in the Scientific Exhibit and in the Technical Exhibits that it has been necessary to devote all the available space in Convention Hall for this purpose. Most exhibits will have historical themes. The meetings of the scientific sections will be assigned to the assembly halls in the numerous excellent hotels of the convention city. These hotels are all within walking distance of the great convention hall.

The President's Reception, which is an important feature of each annual session, will be held on this occasion in the music hall of Convention Hall, which provides facilities for an attendance of many thousands. The distinguished foreign guests, as well as the officers of the American Medical Association, will on that occasion be honored at the reception, and music will be provided by one of the leading orchestras of the nation.

The plans here announced represent but a beginning on some of the many features that are contemplated as part of the celebration of one hundred years of progress in American medicine, associated with the foundation of the American Medical Association in May 1847. The first instalment of a history of the American Medical Association, to be published in 1947, appears in this issue of THE JOURNAL. From the small beginning there reflected has come the great organization which now includes almost 130,000 members with its own properties, its many periodicals, its innumerable services to the medical profession, its councils, bureaus and other agencies devoted to the advancement of medicine and the improvement of the public health.

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GERSON'S CANCER TREATMENT

Some years ago a technic called the Gerson, Sauerbruch-Hermannsdorfer diet was claimed to be a notable advance in the treatment of tuberculosis. Gerson proposed, by the use of these diets, to change the nature of the soil in which the tubercle bacillus lives. According to the reports, Gerson had discovered accidentally some improvement in a patient with lupus who was on a salt free diet. The good results in many types of tuberculosis reported by Gerson were apparently not susceptible of duplication by most other observers.

Dr. Max Bernhard Gerson, according to our records, was born in Wongrowitz, Germany, Oct. 18, 1881 and was graduated by the Albert-Ludwigs-Universtät Medizinische Fakultät, Freiburg, Baden, Germany, in 1909. He was licensed in New York in 1938 and, according to the records of the American Medical Association, is today at 667 Madison Avenue, New York, credited with being a member of the Medical Society of the State of New York. For several years now THE JOURNAL has been receiving requests from people all over the United States for information about Dr. Max Gerson, who is said to be using a dietary and salt controlled method for treating cancer patients at the Gotham Hospital in New York. THE JOURNAL has on several occasions requested Dr. Gerson to supply information as to the details of his method of treatment but has thus far received no satisfactory reply. A preliminary report, "Dietary Considerations in Malignant Neoplastic Diseases," appeared in the *Review of Gastroenterology*, November-December 1945, page 419.

In the meantime occasional references have appeared in the press to the Robinson Foundation for cancer research, located at 14 Wall Street, New York, which is said to be supporting the Gerson method. In the last session of Congress hearings were held on a bill to appropriate $100,000,000 of federal money for research on cancer. Dr. Gerson is said to have presented 5 of his patients to these public hearings. Fortunately for the American people this presentation received little, if any, newspaper publicity. However, Raymond Swing, radio commentator, in a broadcast over A. B. C. July 3, 1946 told the world that the Gerson cancer treatment was producing remarkable results. People who sent for a copy of the broadcast were referred to Dr. George Wiley at the Gotham Hospital.

Now there has come to hand through a prospective patient of Dr. Max Gerson a schedule of diets alleged to be beneficial in such cases. The patient was a man aged 83, with cancer of the stomach and multiple metastases, whom Dr. Gerson had never seen. Nevertheless he provided a complete diet for a period of four weeks, given in minute detail. The diet, which resembles that given in the *Review of Gastroenterology* forbade tobacco, spices, coffee, tea, chocolate, alcohol, white sugar, white flour, pastries and sausages; in short, no canned, preserved, sulfured, frozen, smoked, salted, refined or bottled food. It specified that there must be no salt, soda, sodium bicarbonate, fats or oil. It forbade also for some time the use of meat, fish, eggs, milk, butter, cheese and bread. It permitted fruit but nothing from cans. It specified a mixed fresh apple and carrot juice and other fruit juices and vegetables all freshly prepared and saltless. It forbade the use of aluminum utensils and pots, and it forbade the use of pressure cookers. Basis of the diet was a special soup, of which the unfortunate victim is supposed to take 1 quart a day. The formula included a large parsley root, 3 or 4 leeks, 1 large celery knob, 4 or 5 tomatoes, 3 to 5 large potatoes, 2 or 3 large onions and 3 to 5 carrots. Also permitted was some oatmeal. The medication included Lugol's solution daily, niacin in large amounts daily, liver powder with iron daily, lubile—dried bile salts—one capsule four times a day, brewers' yeast three times daily, dicalcium phosphate with viosterol one tablet eight times a day, phosphorus compound 1 teaspoon dissolved in each glass of juice, 3 cc. of crude liver extract intramuscularly several times a week and also some injected vitamin K. The formula says that there should be no other medication because it can be harmful and dangerous, and it warns particularly against the use of anesthesia, because it says that the body becomes highly hypersensitive through this diet and that the usual anesthesia might become fatal. As a part of the routine Dr. Gerson insists that a patient have at least one copious bowel movement a day, preferably two, and he has provided a formula for an enema to secure this activity.

Early in October the Chicago *Tribune* called attention to the Robinson Foundation, which apparently finances itself by manufacturing electric wire and cable and building life boats and marine equipment. The foundation was established in 1941 but did not qualify for exemption under section 1016 of the revenue code until 1944. Incidentally, a considerable number of similar foundations associated with large industrial concerns have appeared on the medical horizon in recent years. According to Mr. George P. Robinson, president of the foundation, it first sought to finance its activities by contributions. Later the foundation acquired four small manufacturing plants owned by corporations. These were dissolved, and their facilities were operated as divisions of the foundation. Two of the corporations were sold. Those still owned are the Hatfield Wire and Cable Company of Hillside, N. J., and Wellin Davit and Boat Company of Amboy, N. J. Mr. Robinson said, according to the Chicago *Tribune*, that the manufacturing divisions are managed as if they were separate corporate entities and are operated as competitive business enterprises. They pay unemployment insurance, local and state taxes and provide for depreciation, but they qualify for federal tax exemption by conforming

their operations to the provision of the revenue code as does a college. Among the members of the foundation's advisory committee are listed Charles Seymour, Harlow Shapley, Raymond Swing, Matthew Woll and W. Cameron Forbes. Irving Fisher, professor of economics at Yale University, is listed as the director in charge of the foundation's section on health education.

Without any further investigation it would appear that a technic has developed whereby industrial corporations may incorporate themselves as research foundations and thus be free from federal income tax, since their profits are given to research in various medical fields. The intimate details of the conduct of these foundations are not open for public inspection, and Mr. George P. Robinson, when questioned, declined to disclose the earnings of the foundation that he represents. Similar foundations have been established in New York and in Washington. One corporation formed by the alumni of New York University acquired ownership of a piston ring manufacturing company, the untaxed profits of which are turned over to the university.

In the present instance the Robinson Foundation seems to be devoted to the promotion of an unestablished, somewhat questionable method of treating cancer. The only statements as to the number of patients treated, the number benefited and the possible effects of the treatment is that in the *Review of Gastroenterology* already cited. It offers clinical impressions as to benefits secured but nothing resembling scientific evidence as to the actual merit of the method. Indeed, it admits lack of any actual cure, claiming only that patients seemed improved in health and that some tumors were delayed in growth or became smaller. The entire performance, including the financial backing, the promotion and the scientific reports, has a peculiar effluvium which, to say the least, is distasteful and, at its worst, creates doubt and suspicion.

TRANSMISSION OF PRIMARY ATYPICAL PNEUMONIA TO VOLUNTEERS

During 1943 and 1944 studies on the transmissibility of primary atypical pneumonia were conducted on a group of conscientious objectors. The purpose of the studies was to determine whether atypical pneumonia could be transmitted with secretions of the respiratory tract of patients, whether the disease so produced resembled the naturally acquired infection and, finally, whether the disease could be induced by bacteria-free filtrates. Three groups of experiments were conducted, the first in October 1943 and the second and third during the summer of 1944.

The results of the second two experiments have been recently summarized in a series of reports [1] emanating from the Commission on Acute Respiratory Diseases. In the first of these, 36 men between the ages of 19 and 45 were selected after clinical and roentgenographic examination had shown that they were free from organic or infectious disease. All the volunteers were isolated and observed for three weeks prior to inoculation. The material inoculated into the volunteers was obtained from the throat washings and sputum of 7 patients with atypical pneumonia who had been admitted to the wards of the Regional Hospital at Fort Bragg during the previous two months. Before inoculation each volunteer was assigned to one of three groups, each group containing 12 men. One group received pooled material which had been filtered through Corning sintered glass or Seitz filters. Another group received material which had been autoclaved at 15 pounds pressure for ten minutes, and the third group received inoculum which had been untreated.

The final experiment differed only in that the volunteer group had been enlarged to 42 men, a few changes were made in the method of segregation of volunteers within the hotel, and the inoculum was administered outdoors and on separate days. There was also a slight difference in the origin of passage material, that is, the material for inoculation had been obtained from 6 cases of atypical pneumonia which had been experimentally induced. In the experiment in which 36 volunteers were involved, 10 became ill with what was classified as atypical pneumonia; 4 had received the filtered inoculum, 3 the autoclaved inoculum and 3 untreated material. In the final experiment involving 42 volunteers, 6 developed characteristic signs of atypical pneumonia; none of 18 who received the autoclaved inoculum became ill, but 3 who received the filtered inoculum and 3 the untreated inoculum developed the disease. In addition to atypical pneumonia, 15 of the first group and 11 of the second group developed minor respiratory illness of an undifferentiated type, thus suggesting a relationship between this group of diseases and atypical pneumonia.

In those cases in which atypical pneumonia developed as a result of experimental inoculation the incubation period was approximately one week in those who received untreated inoculum. In the 16 volunteers who developed the clinical features of atypical pneumonia the symptomatology, physical findings, roentgenographic pattern and clinical course were similar to the naturally acquired infection. An insidious onset is characteristic. The physical signs included moderate inflammatory changes in the upper respiratory tract and varying degrees of infiltration of the lungs.

As in the naturally occurring infection, examples of mild, moderately severe and severe forms of atypical pneumonia were observed. Of the 16 who developed atypical pneumonia 2 had severe illnesses associated with extensive infiltration of the lungs, and an addi-

1. Commission on Acute Respiratory Diseases, Fort Bragg, North Carolina: The Transmission of Primary Atypical Pneumonia to Human Volunteers, Bull. Johns Hopkins Hosp. **79**: 97 (Aug.) 1946.

tional patient showed disorientation and emotional instability. Recovery, however, occurred in all patients, though it was more prolonged in those who were severely ill than in the others.

Laboratory studies were carried out on all the volunteers who developed primary atypical pneumonia and on the 26 inoculated persons who developed minor respiratory illnesses. Apparently the only significant change was a rise in titer of cold hemagglutinins, which occurred in 13 of the 16 cases of atypical pneumonia and in 11 of the 26 cases of minor respiratory illness.

These extensive and significant studies indicate that primary atypical pneumonia can be produced, though not invariably, by artificial transmission. The evidence indicates that the causative agent is filtrable, since nearly as high a proportion of cases developed following the use of a filtered inoculum as from the untreated material. On the basis of present knowledge there seems to be no difference between what is called primary atypical pneumonia and virus pneumonia. Furthermore, although evidence was not obtained indicating a relation between atypical pneumonia and influenza A or influenza B, it seems likely that many cases of minor respiratory illness occurring coincidentally with atypical pneumonia may be caused by the same etiologic agent.

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Current Comment

NEW PLAN FOR REGISTERING FELLOWS IN ADVANCE OF THE ANNUAL A. M. A. SESSION

At the suggestion and under the direction of the Board of Trustees, a plan is being developed for advance registration of Fellows who will attend the Ninety-Seventh Annual Session in Atlantic City, June 9-13, 1947. Arrangements have been made with the Housing Committee in Atlantic City to supply the headquarters office with duplicate slips of hotel room confirmations. These will be taken as evidence of proposed attendance at the session. The A. M. A. office in turn will send a letter and advance registration blank for immediate execution to Fellows who have made their hotel reservations. The registration form will be serially numbered, and this number will tally with that on an identification card that will be mailed to Fellows in return for the filled-in advance registration. The identification card is to be preserved and brought to the meeting. The identification card when presented at the proper window of the Registration Bureau in the Atlantic City convention hall will enable the clerk to supply, in a matter of seconds, the official Fellow's badge of admission to the scientific and social functions, program and lapel button for guest or guests. Any Fellow or Member planning to attend the meeting, but who will not have or need a hotel room in Atlantic City should write also to the American Medical Association, 535 North Dearborn Street, Chicago 10, for an advance registration blank. The 1947 session, which will commemorate the one hundredth anniversary of the American Medical Association, is attracting an exceedingly large attendance. Fellows will appreciate the convenience and saving of time to be experienced by this proposed advance registration.

SALMONELLA PULLORUM

In a period of three days in August 1945 at least 423 members of several squadrons at an army air base became ill[1] and 172 of them required hospitalization. The total number affected was larger, as some whose symptoms were mild did not appear at sick call. In the hospitalized patients the symptoms, in order of frequency, were fever (average 102, in some 105 F.), diarrhea, headache, abdominal cramps, chills, nausea, vomiting, myalgia, prostration and backache. All patients recovered and were discharged from the hospital by the end of the third day. However, the military importance of the outbreak is obvious. An investigation was made by the Central Diarrheal Disease Control Laboratory of the School of Aviation Medicine, Randolph Field, Texas, but the unit did not arrive at the base until the patients were recovering from the acute phase of the illness. Nevertheless the general mess where these squadrons ate their meals was promptly implicated and it was found that a rice pudding into which raw chicken eggs and canned milk had been mixed was the only food eaten by practically all of the patients. As it was, Salmonella pullorum was isolated from the stools of 11.7 per cent of the hospital patients; Salmonella derby was obtained from 1 patient (0.6 per cent). Other pathogens were not found, nor were salmonella cultures obtained from any of the healthy mess attendants. The anal swab technic was used, the swabs being plated directly and also after preliminary enrichment. Cultures were thus made from all but 1 of the hospital patients and from all of the healthy mess attendants. While the facts brought out were necessarily not complete, after careful consideration of various etiologic possibilities it was concluded that Salmonella pullorum was the active agent of the outbreak. Salmonella pullorum, a familiar cause of disease in chickens, is known to be present in the eggs of infected fowls. Usually described as not pathogenic for man, it has never before, as far as the authors know, been incriminated as the cause of a definite outbreak of food poisoning. The importance of determining its role as a human pathogen, however, had previously been emphasized.[2] The more recent evidence further serves to make necessary reconsideration of the role of this organism as a human pathogen and to warn against the use as food of raw eggs and egg products infected with Salmonella pullorum.

1. Mitchell, Roland B.; Garlock, Fred C., and Broh-Kahn, R. H.: An Outbreak of Gastroenteritis Presumably Caused by Salmonella Pullorum, J. Infect. Dis. **78**: 57 (July-Aug.) 1946; abstr. Bull. U. S. Army M. Dept. **5**: 248 (March) 1946.

2. Edwards, P. R., and Bruner, D. W.: J. Infect. Dis. **72**: 58 (Jan.-Feb.) 1943.

ORGANIZATION SECTION

Official Notes

RESOLUTIONS TO BE PRESENTED TO HOUSE OF DELEGATES

NOTE.—These resolutions are published in accordance with a request of the House of Delegates to the effect that resolutions to be presented before the House of Delegates be published thirty days before the House of Delegates is to convene in session.

These resolutions were adopted by the Michigan State Medical Society:

Resolutions on Establishment of General Practice Sections in Approved Hospitals

WHEREAS, The House of Delegates of the American Medical Association has established an individual section on the General Practice of Medicine; and

WHEREAS, The General Practitioner has been recognized as a separate branch in the medical profession; and

WHEREAS, This group has shown its interest in this section by registering 939 members in the section at the 1946 American Medical Association meeting in San Francisco; and

WHEREAS, Their scientific section meetings were well attended; and

WHEREAS, The House of Delegates has already voiced its approval of such sections in the separate state and county societies that are component parts of the American Medical Association; and

WHEREAS, Sections on General Practice have been started in some recognized hospitals that are approved by the American College of Surgeons and Council on Medical Education and Hospitals and have been accepted by those bodies; and

WHEREAS, Many hospitals have not established General Practice sections in their visiting active staffs, and their governing heads are doubtful whether such action has the approval of the bodies which set up the rules and regulations for the approval of their hospitals for interns and residents; therefore be it

Resolved, That the Delegates of the Michigan State Medical Society in convention assembled voice their approval of the establishment of Sections on General Practice in approved hospitals and that the Delegates from Michigan to the American Medical Association House of Delegates introduce a similar resolution at the next meeting, requesting approval of that body; and be it further

Resolved, That a copy of this resolution be sent to the Hospital Committee of the American College of Surgeons with a request that this body voice approval of such sections and include such in its Manual of Hospital Regulations.

Resolution on American Medical Association Contribution to Health Education Projects

WHEREAS, The Michigan State Medical Society has supported a program of Health Education during the past five years; and

WHEREAS, Such Health Education is not purely of local but also of national interest and value; therefore be it

Resolved, That the delegates of the Michigan State Medical Society to the American Medical Association be instructed to initiate a study of a policy by which the American Medical Association can contribute a portion of the cost of such a program of Health Education carried on by any state medical society.

A. M. A.-N. B. C. CENTENNIAL BROADCASTS

In celebration of the centennial year of the American Medical Association, 1947, the twelfth annual series of the A. M. A.-N. B. C. dramatized broadcasts will be devoted to features of medical progress in the United States during the hundred years of the existence of the American Medical Association.

For purposes of the broadcast, the United States will be divided into twenty-five regions as shown in the accompanying map. These regions have been chosen with a view to grouping together states which have a similar history and similar general characteristics, such as, for example, the four states of the Rocky Mountain region, the two groups of New England states, and the Southeastern and the Central Southern groups.

One broadcast will be devoted to medical progress in each of these regions, and the twenty-sixth and closing week will deal with the hundred years of the American Medical Association from a nationwide standpoint.

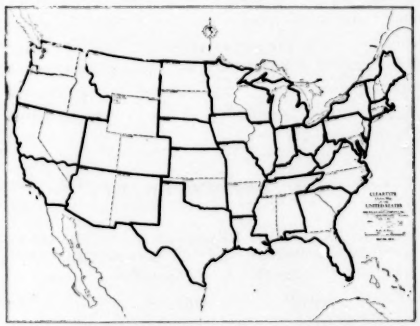
Each broadcast will be divided into two parts. The first part will consist of a dramatization dealing with historic physicians and medical events in the region. This will be broadcast from Chicago. The first part of the program will take approximately twenty-three minutes.

For part two of the program we will switch from Chicago to a radio station to be designated in each of the twenty-five regional areas. From this station a three minute broadcast will be made by a speaker representing the medical societies in that area.

State medical societies have been requested to furnish historical material and to nominate speakers. All have now responded and are in the process of making material available.

An effort will be made to announce in THE JOURNAL from week to week the date for each regional broadcast. The sequence will be determined by the order in which materials are received from state medical societies.

It is hoped that each state medical society will give wide publicity to its regional broadcast within its own borders.



Published with permission of the American Map Company.

Twenty-five regions into which states have been grouped.

Such publicity can be by local radio broadcasts, newspaper publicity, posters or newspaper advertising.

The title for the series will be "Doctors—Then and Now," and the theme will be "A Century of Progress by American Medicine."

The dramatic scripts will be written by William J. Murphy, veteran medical script writer responsible for most of the previous A. M. A.-N. B. C. series; production will be directed by Norman Felton, director of the two preceding series; Joseph Gallicchio will again direct the N. B. C. orchestra. Arrangements with N. B. C. have been made through the office of Miss Judith Waller, Public Service Director, Central Division, National Broadcasting Company.

The first four dates with topics are as follows: Dec. 7, 1946 Alabama, Mississippi and Tennessee; subject James Marion Sims; the speaker, to be announced, will broadcast from station WSM, Nashville. Dec. 14, 1946 Kansas and Oklahoma; subject Dr. Samuel J. Crumbine; speaker Dr. L. J. Moorman, who will speak from station WKY at Oklahoma City. Dec. 21, 1946 no broadcast. Dec. 28, 1946 Minnesota and Wisconsin; subject William Beaumont; speaker Dr. William A. O'Brien, who will speak from station KSTP at St. Paul.

The program will be broadcast from 3 to 3:30 p. m., central standard time.

Subsequent programs will be announced as soon as they are ready.

MEDICINE AND EDUCATION TEAM UP FOR HEALTH AND PHYSICAL FITNESS

The appointment of Dr. Dean F. Smiley and Mr. Fred V. Hein as consultants in health and physical fitness, on the staff of the Bureau of Health Education of the American Medical Association, is announced.

Dr. Smiley, recently a commander in the U. S. Navy, who will function as the medical adviser of the team, received both his A.B. and M.D. degrees at Cornell University. He has had a broad experience in preventive medicine and in all aspects of health education at Cornell University, in the New York State Education Department and as director of the medical aspects of audiovisual education in the U. S. Navy. Dr. Smiley has served as secretary and president of the American Student Health Association, is a member of the Committee on Motion Pictures of the American Medical Association and is a fellow of the American Public Health Association. He has written widely for professional magazines and is co-author of numerous books in the health field, among the most widely known of which are "A College Textbook of Hygiene," "Community Hygiene" and the "Health and Growth Series." Dr. Smiley also was a member of the investigating committee for the Carnegie Foundation for the Advancement of Teaching in its inquiry into school and college athletics.

Fred V. Hein, the educational consultant, comes directly from the public school field. He attended La Crosse State Teachers College, received his Ph.B. from Ripon College, the M.S. degree from the University of Wisconsin, and he expects to receive his Ph.D. from the same institution in the near future. Mr. Hein has taught all phases of health and physical education from the elementary through the college level and for the last eight years has been director of health and physical education in the public schools of Oshkosh, Wis. During the war he served as director of the Physical Training Program for the Army Air Corps unit at the Oshkosh State Teachers College and has lately been a visiting lecturer at the University of Wisconsin. Mr. Hein is a past president of the Wisconsin Health and Physical Education Association and has served as chairman of various sections of the Midwest Physical Education Society. He is a contributor to periodicals in the field and has recently completed his doctor's dissertation in the area of interpreting the program to the home and the community.

Coming Medical Meetings

American Medical Association House of Delegates Supplemental Session, Chicago, Dec. 9-11. Dr. George F. Lull, 535 N. Dearborn St., Chicago 10, Secretary.

Conference of State Secretaries and Editors, Chicago, Dec. 7-8. Dr. George F. Lull, 535 N. Dearborn St., Chicago 10, Secretary.

American Academy of Allergy, New York, Nov. 25-27. Dr. Karl D. Figley, 316 Michigan St., Toledo 2, Ohio, Secretary.

American Academy of Dermatology and Syphilology, Cleveland, Dec. 7-12. Dr. Earl D. Osborne, 471 Delaware Ave., Buffalo, N. Y., Secretary.

American College of Surgeons, Cleveland, Dec. 16-20. Dr. Dallas B. Phemister, 40 E. Erie St., Chicago 11, Secretary.

American Society of Anesthesiologists, New York, Dec. 12. Dr. Curtiss B. Hickcox, 745 Fifth Ave., Room 1503, New York, Secretary.

National Society for the Prevention of Blindness, New York, Nov. 25-27. Mrs. Eleanor Brown Merrill, 1790 Broadway, New York 19, Executive Director.

Post Graduate Medical Assembly of South Texas, Houston, Dec. 3-5. Dr. M. B. Stokes, 229 Medical Arts Bldg., Houston, Secretary.

Puerto Rico, Medical Association of, Santurce, Dec. 13-15. Dr. Rafael A. Vilar, P. O. Box 3866, Santurce, Secretary.

Radiological Society of North America, Chicago, Dec. 1-6. Dr. Donald S. Childs, 607 Medical Arts Bldg., Syracuse 2, N. Y., Secretary.

Society of Surgeons of New Jersey, Newark, Nov. 20. Dr. Walter B. Mount, 21 Plymouth St., Montclair, Secretary.

Southern Surgical Association, Hot Springs, Va., Dec. 10-12. Dr. Alfred Blalock, Johns Hopkins Hospital, Baltimore 5, Secretary.

Western Surgical Association, Memphis, Tenn., Dec. 5-7. Dr. Warren H. Cole, 1853 W. Polk St., Chicago 12, Secretary.

Washington Letter

(From a Special Correspondent)

Nov. 11, 1946.

Republican Stand on Medical Legislation

Proponents of socialized medicine were expected to have less success in winning consideration of their legislation with the Republican party having won majorities both in the House and in the Senate. G. O. P. leaders have already expressed their opposition to enactment of bills advanced by advocates of socialized medicine. Not only will the eightieth Congress have many new faces in both houses but there will be extensive changes in committee lineups due to the reduction in the number of committees from forty-eight to nineteen in the House and from thirty-three to fifteen in the Senate. Republicans have indicated that they propose to accept the congressional streamlining passed at the last session. It will be adopted on a trial basis.

Public Health Officials Advised to get Support of Businessmen

Howard Strong of the Chamber of Commerce of the United States advised public health officials to get the aid of businessmen to secure enactment of health programs when he addressed a one day conference held by the Metropolitan Washington Tuberculosis Conference. Mr. Strong said "Citizens usually discount the need for a public health program when advanced by public health officials, but if businessmen get behind it the idea goes over much better." The use of streptomycin in the treatment of tuberculosis and the nursing problem were among other subjects discussed by the 250 delegates, which included public health officials, doctors, nurses and laymen interested in the treatment of tuberculosis.

Eight Thousand Amputees Apply for Specially Equipped Automobiles from Congress

The Veterans Administration has announced that 8,000 disabled veterans have applied for automobiles under the legislation signed by President Truman on August 8 whereby veterans who lost the use of one or both legs at or above the ankle are entitled to free cars. Only 75 cars have been delivered so far. The War Assets Administration has also made military typewriters available to disabled patients at Walter Reed General and Bethesda Naval hospitals for $20 and $25 each. Four categories of patients may apply for the typewriters: amputees, the paraplegic, the tuberculous and others facing extended hospitalization or future restrictions to sedentary work.

General Erskine Asks Jurisdiction Over Artificial Limb Industry

Major Gen. G. B. Erskine, director of veteran reemployment and retraining, has asked John Steelman, reconversion director, for jurisdiction over the manufacture and distribution of artificial limbs. Amputees, he says, complain that publicized "improvements" in artificial limbs have not reached the production stage. Mr. Steelman has not yet replied to General Erskine's request for authority to assist the Committee on Prosthetic Devices and independent manufacturers to translate research into production, for a training program for limb mechanics and fitters, and for establishing standards for the prosthetic appliance field.

Cancer Council Approves $225,000 in Research Grants

The National Advisory Cancer Council has announced that it has approved grants in aid totaling $225,000 to twenty universities, hospitals and research units. Twenty-four physicians, representing fourteen medical schools, met with the council to plan a medical education program against cancer, second disease in the cause of death in the United States. Dr. Thomas Parran, Surgeon General of the U. S. Public Health Service, said that more comprehensive and better integrated courses in cancer at medical schools were considered.

Winner of Women's Medical Association Award Completes Study Here

Dr. Alicia Galaga Romero of Mexico City, first winner of the American Women's Medical Association fellowship award to foreign women physicians, has completed her year of study in this country, at Children's Hospital here. She has returned to her home city as a specialist in children's diseases.

GOVERNMENT SERVICES

ARMY

APPOINT MORE CIVILIAN CONSULTANTS

The War Department announced October 21 the appointment through the Surgeon General of 122 civilian medical consultants to the Secretary of War. This brings the total of civilian consultants available to the Army Medical Department to 327. Some 70,000 patients are in army hospitals throughout the world.

James H. Kidder, New York, dean of the College of Pharmacy, Fordham University, was named as consultant to the Surgeon General to advise on matters relating to pharmacy.

Those whose appointments were announced are:

INTERNAL MEDICINE

Daniel H. Autry, Little Rock, Ark.
William W. Bondurant Jr., San Antonio, Texas.
Bruce P. Webster, New York.
Sam A. Overstreet, Louisville, Ky.
William H. Higgins, Richmond, Va.
John W. Brown, San Francisco.
Dwight L. Wilbur, San Francisco.
Edwin G. Bannick, Seattle.
Frank R. Maddison, Tacoma, Wash.
Treacy H. Duerfeldt, Tacoma, Wash.
James W. Haviland, Tacoma, Wash.
Verne R. Mason, Los Angeles.
Charles F. Wilkinson Jr., Ann Arbor, Mich.
Donald F. Marion, Coral Gables, Fla.
Jack O. W. Rash, Miami, Fla.
Franz H. Stewart, Miami, Fla.
Howard L. Alt, Evanston, Ill.
Marion H. Barker, Chicago.
Neil L. Crone, Belmont, Mass.
Perrin H. Long, Baltimore.
William D. Province, Franklin, Ind.
Robert C. Kimbrough Jr., Ann Arbor, Mich.
Henry M. Winans, Dallas, Texas.
Johnson McGuire, Cincinnati.
Arthur N. Ferguson, Fort Wayne, Ind.

DERMATOLOGY-SYPHILOLOGY

George V. Kulchar, San Francisco.
Howard Hailey, Atlanta, Ga.
Clarence S. Livingood, Philadelphia.
Donald M. Pillsbury, Philadelphia.

DERMATOLOGY

Edward A. Levin, San Francisco.

PEDIATRICS

John A. Washington, Washington, D. C.
Harry H. Gordon, New York.

PHYSICAL MEDICINE

Frank H. Krusen, Rochester, Minn.
Kristian G. Hansson, New York.
Richard L. Kovacs, New York.

GENERAL SURGERY

Robert T. Allison Jr., Akron, Ohio.
Thomas A. Botsford, Brookline, Mass.
Roscoe C. Giles, Chicago.
John A. Hardy, El Paso, Texas.
Siegfried F. Hermann, Tacoma, Wash.
George D. Lilly, Miami, Fla.
Thomas B. Quigley, Boston.
Fred W. Rankin, Lexington, Ky.

OTOLARYNGOLOGY

Hallowell Davis, St. Louis.
S. Richard Silverman, St. Louis.
Albert C. Furstenberg, Ann Arbor, Mich.
Mercer G. Lynch, New Orleans.
M. P. S. Spearman, El Paso, Texas.

RADIOLOGY

William E. Allen Jr., St. Louis.
Edgar M. McPeak, Washington, D. C.
Ernst A. Schmidt, Denver.

ORTHOPEDICS

Edward W. Cullipher, Miami, Fla.
Louis H. Edmunds, Seattle.
William H. Goering, Tacoma, Wash.
Robert P. Kelly, Atlanta, Ga.

AURAL REHABILITATION

Grant Fairbanks, Los Angeles.

NEUROSURGERY

Frank W. Lusignan, San Francisco.

OBSTETRICS AND GYNECOLOGY

Carlton N. Price, Washington, D. C.

UROLOGY

Burton L. Stewart, North Hollywood, Calif.
William A. Sumner, San Francisco.

PLANS AND OPERATIONS

Eli Ginsberg, Ph.D., statistician, New York.
Mr. Jarrett White, real estate and hospital construction adviser, Washington, D. C.

NEUROPSYCHIATRY

Titus H. Harris, Galveston, Texas.
Martin L. Towler, Galveston, Texas.
Hamilton F. Ford, Galveston, Texas.
Melvin W. Thorner, San Antonio, Texas.
George S. Johnson, San Francisco.

PSYCHIATRY

Seymour Rosenberg, Washington, D. C.
Jack R. Ewalt, Galveston, Texas.

PREVENTIVE MEDICINE

Nutrition
Otto A. Bessey, New York.
Charles S. Davidson, Boston.
Theodore E. Friedemann, Chicago.
Wendell H. Griffith, St. Louis.
Charles C. King, Scarsdale, N. Y.
Mr. Joseph L. Poulin, Melrose, Mass.
William D. Robinson, Ann Arbor, Mich.
Frederick J. Stare, Boston.
V. P. Sydenstricker, Augusta, Ga.
John B. Youmans, Nashville, Tenn.
Joseph T. Wearn, Cleveland.

Public Health
Franklin H. Top, Detroit.
Herman Kiefer, Detroit.
Thomas B. Turner, Baltimore.

Civil Public Health
Mr. Raymond F. Burghardt, Forest Hills, N. Y.
Martin Brobisher, Baltimore.
Alden B. Hatch, Jackson Heights, N. Y.

Bacteriology
George G. Callendar, Washington, D. C.
N. Paul Hudson, Columbus, Ohio.

Sanitary Engineering
Mr. William A. Hardenbergh, New York.

Health Education
Granville W. Larimore, New York.

Dermatology
William Leifer, New York.

Parasitology
Malcolm S. Ferguson, Princeton, N. J.

Laboratories
Gustave J. Dammin, St. Louis.

Medical Intelligence
Gaylord W. Anderson, Minneapolis.

Registered X-Ray Physicist
Carl B. Braestrup, Ph.D., New York.

Syphilology
J. Earle Moore, Baltimore.

HISTORICAL CONSULTANTS

History of Preventive Medicine, Southwest Pacific Area
James W. Bass, Dallas, Texas.

History of Preventive Medicine, European Theater
John E. Gordon, Waban, Mass.

History of Neurosurgery
Frederic H. Lewey, Philadelphia.

History of Surgery
David H. Poer, Atlanta, Ga.

History of the Army Medical Department
Morris Fishbein, Chicago.
Sanford V. Larkey, Baltimore.
Ben J. Robinson, Baltimore.
Richard H. Shryock, Ph.D., Merion Station, Pa.
Lewis H. Weed, Baltimore.

CONSULTANTS TO ARMY EPIDEMIOLOGIC BOARD, ARMY MEDICAL RESEARCH AND DEVELOPMENT BOARD

Sanitary Engineering
Gordon M. Fair, Cambridge, Mass.
Mr. Walter D. Tiedman, Albany, N. Y.
Professor Constantin Yaglou, Boston.

Preventive Medicine and Epidemic Diseases
Stanhope Bayne-Jones, New Haven, Conn.
Francis G. Blake, New Haven, Conn.
John H. Dingle, Cleveland.
Thomas Francis Jr., Ann Arbor, Mich.
William McD. Hammon, San Francisco.
George K. Hirst, New York.
Robert F. Loeb, New York.
Colin MacLeod, New York.
Kenneth F. Maxcy, Baltimore.
Karl F. Meyer, San Francisco.
John R. Paul, New Haven, Conn.
Albert B. Sabin, Cincinnati.
Jonas E. Salk, Ann Arbor, Mich.
Joseph Stokes Jr., Philadelphia.

FLIGHT NURSES

Twelve officers of the Army Nurses Corps graduated from the Army Air Forces School of Aviation Medicine at Randolph Field, Texas, on October 25 as flight nurses. These carefully selected volunteer nurses came to the school for an intensive nine weeks' training course, the first five of which were given over to basic military medical and surgical subjects and the final four weeks to actual air evacuation flights in the United States. On certification of the commanding general, Army Air Forces, the graduates are authorized to wear the distinctive wings of the Army Air Force Flight Nurses.

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THE ARMY NEEDS PSYCHIATRIC SOCIAL WORKERS

In a War Department announcement, October 18, Major Gen. Norman T. Kirk, the Surgeon General, urged that officers and former officers qualified in psychiatric social work make application for integration into the Regular Army. Officers are eligible whether on active duty or not and regardless of their branch of service. Officers awarded commissions will receive them temporarily in the Pharmacy Corps.

Psychiatric social workers are needed to augment neuropsychiatrists. Former A. U. S. officers may apply for commission in the Pharmacy Corps as technical specialists in psychiatric social work. Appointments will be made in grades from 2d lieutenant through major in a grade not higher than that held during wartime. Applicants appointed who are now enlisted men or warrant officers will be discharged for the convenience of the government to accept commissions in the Regular Army. As this is an interim measure, special educational requirements for the Pharmacy Corps are waived. College graduates with a degree acceptable to the Surgeon General, which will basically qualify the officer for further training in psychiatric social work, will be acceptable for integration into the Pharmacy Corps. For initial classification as a psychiatric social worker the applicant must have completed at least one year of training in an accredited school of social work, including supervised field work and one year social case work experience in a health or welfare agency of acceptable standards.

Applications must be forwarded prior to Dec. 31, 1946. Formal applications, in triplicate, will be made on WD AGO Form 62 (Sept. 1, 1946) and forwarded to the Commanding General of the Army area in which the applicant resides.

OCHSNER MEDICAL FOUNDATION PURCHASES STATION HOSPITAL

The offer of the Alton Ochsner Medical Foundation to purchase the station hospital at Camp Plauche, Louisiana, for $150,000 has been approved by the War Assets Administration. The foundation proposes to establish a 625 bed hospital, of which it is planned that 300 beds will be for patients originating through the Ochsner Clinic, 25 beds for charity purposes supported by funds of the Ochsner Foundation, and 300 beds to establish an amputation center primarily for veterans of World War II. It is also anticipated that a school for teaching veteran amputees will be established in the hospital as well as facilities for servicing and testing of artificial limbs. The present staff of the foundation consists of 81 doctors, of whom 46 are veterans, 26 of the group being in training for special amputee work.

The installation at Camp Plauche consists of 111 temporary frame buildings on 86.56 acres of leased land. The transaction will include all the medical equipment and supplies now in the hospital which are essential to the proposed plan of operation, with the exception of certain items of dental equipment.

MEDICAL CARDS AVAILABLE TO LIBRARIES

Beginning October 1, entries prepared by the Army Medical Library will be printed and made available for distribution by the Library of Congress. These entries will vary from the present Library of Congress cards in some details. They will carry the subject heads and new classification numbers of the Army Medical Library. Subscriptions to the series should be placed with the Card Divisions of the Library of Congress, to which all inquiries regarding these cards should be addressed.

PERSONALS

Mr. Robert B. Austin has been appointed acting head of the Cleveland branch of the Army Medical Library to succeed Dr. Max H. Fisch, who has accepted a professorship at the University of Illinois. Mr. Austin has been with the Army Medical Library in various capacities since 1928.

AN INTENSIVE FOOD RESEARCH PROGRAM

Eighty colleges, universities and other agencies are collaborating with the Quartermaster Corps in a comprehensive research program designed to evaluate and improve the nutritional and physiologic adequacy and the acceptability of rations for use under operational conditions, to improve the functional characteristics of food and to investigate the chemical and microbiologic factors which affect the stability of foods and rations for the Army.

The program is sponsored by a Committee on Research which includes Emil Mrak, associate professor, division of food technology, University of California; Dr. W. F. Geddes, chief, division of agricultural biochemistry, University of Minnesota; Dr. H. E. Longnecker, dean, graduate school, University of Pittsburgh; Dr. George F. Steward, research professor, poultry husbandry, Iowa State College; Dr. George Gelman, technical director of the Quartermaster Food and Container Institute of the Armed Forces, and Dr. M. L. Anson, director of chemical research, Continental Foods, Inc. The center of this comprehensive program is the Quartermaster Food and Container Institute at Chicago. The program has been divided into more than a hundred research projects.

Col. Charles S. Lawrence, commanding officer of the Food and Container Institute, points out that acceptability of foods by soldiers is of utmost importance in military feeding. The problem of optimum acceptability, Colonel Lawrence says, is a complicated one for the civilian populations, but for the military these complications are increased many fold. Superimposed on these difficulties are environmental factors such as feeding under assault, combat, survival and support conditions; the effects of climate and of physiologic and psychologic factors; allergies; food habits, and numerous other factors.

A scientific advisory board serves to bring to the attention of the Committee on Food Research specific problems having military implications which require fundamental research, and the board assists in translating these problems into fundamental research. Members of the advisory board are Dr. George Berryman, director of research, Medical Nutrition Laboratory, U. S. Army; Dr. S. M. Cantor, Corn Industries Research Foundation; Dr. Ralph M. Conrad, director Bureau of Industrial Research, University of Denver; Dr. H. C. Diehl, director, the Refrigeration Research Foundation, Inc.; Dr. W. Franklin Dove, chief, food acceptance branch, Food and Container Institute; Dr. C. G. King, director, Nutrition Research Foundation, Inc.; Dr. H. H. Kraybill, director of research, American Meat Institute; Dr. Samuel Lopkovsky, associate professor, plant pathology, Cornell University; Dr. O. B. Williams, professor and chairman, department of botany and bacteriology, University of Texas; Dr. Louis Howard, chief, Bureau of Agricultural and Industrial Chemistry, U. S. Department of Agriculture, and Dr. S. T. Coulter, professor, dairy husbandry, University of Minnesota.

ENLIST CERTAIN DISABLED VETERANS

The War Department has announced that certain categories of disabled veterans will be accepted for enlistment in the Regular Army in order to use their skills and also to offer the Army as a career to many heretofore barred because of disability caused by honorable service. The War Department has directed that an initial 5,000 partially disabled veterans will be accepted for service in the Regular Army. Careful study of the accomplishments and the development of special skills by partially disabled men has proved that they have equal value in many occupations to many other men unhindered by any handicap. Some of the positions listed by the War Department as those that can be filled by these individuals include x-ray technician, medical technician, dental assistant, medical laboratory technician, dental laboratory technician, pharmacy technician, clerk and stenographer. This action permits the War Department to accomplish materially within the Army the rehabilitation placement of certain disabled veterans, a program it has long sponsored in civilian placement.

Use of the disabled enlistee to fill the need for skilled manpower will allow the Army to release more physically fit soldiers for more strenuous duties.

NAVY

FULL TIME ACTIVE DUTY FOR NAVAL RESERVE OFFICERS

The Naval Air Reserve Training Command, Glenview, Ill., invites the attention of reserve medical officers and pharmacists of the Hospital Corps to the opportunity to perform full time active duty at one of the following major naval air stations or at one of the Naval Air Reserve training units:

Stations of the Naval Air Reserve Training Command:

NAS, Atlanta, Ga
NAS, Columbus, Ohio.
NAS, Dallas, Texas.
NAS, Glenview, Ill.
NAS, Grosse Ile, Mich.
NAS, Los Alamitos, Calif.
NAS, Memphis, Tenn.
NAS, Minneapolis.
NAS, New Orleans.
NAS, New York.
NAS, Oakland, Calif.
NAS, Olathe, Kan.
NAS, Squantum, Mass.
NAS, St. Louis.
NAS, Willow Grove, Pa.

Naval Air Reserve Training Units

These are based at the following Naval Air Stations:

Anacostia, D. C.
Jacksonville, Fla.
Miami, Fla.
Norfolk, Va.
San Diego, Calif.
Seattle.

Officers in the aforementioned category interested in full time active duty as a member of the stationkeeper staff at one of the stations or units listed should initiate letters to the Bureau of Naval Personnel via the Chief of Naval Air Reserve Training, Naval Air Station, Glenview, Ill., and BuMed; listing three or four stations at which duty is desired in order of preference. Personnel are desired in the ranks of commander and lieutenant commander in the Medical Corps.

Officers qualifying for these billets can be assured of every consideration in obtaining and continuing duty at the station of their preference. It is the policy of the command to obtain "orders to duty involving flying" for designated naval flight surgeons. Government quarters are available at many of the major naval air stations.

Naval flight surgeons of the reserve desirous of affiliating with the organized or volunteer components of the inactive reserve naval or marine air groups training at one of the naval air stations or Naval Air Reserve training units listed should communicate with the commanding officer of the station or the Naval Air Reserve training unit at which the training unit is based.

NAVY AWARDS AND COMMENDATIONS

Lieutenant Francis H. McCullough

The Commendation Ribbon was recently awarded to Lieut. Francis H. McCullough (MC), U.S.N.R., Jackson Heights, N. Y., "for excellent service in the line of professional duties as medical officer aboard a United States destroyer when on April 6, 1945 he voluntarily boarded the U. S. S. *Morris*, which had been struck and left burning furiously by an enemy suicide plane during the amphibious assault and capture of Okinawa. In face of great danger from raging fires and imminent danger of explosion of the ship's magazines," continues the citation, "Dr. McCullough rendered invaluable professional assistance in the treatment of the numerous casualties. . . . As a result of his skill only 1 of the 43 seriously wounded men died." Dr. McCullough was graduated from Duke University School of Medicine, Durham, N. C., in 1943 and entered the service Oct 1, 1944.

Commander Lawrence Stewart Bailey

The Commendation Ribbon was recently awarded to Comdr. Lawrence Stewart Bailey (MC), U.S.N.R., Zionsville, Ind., for distinguishing himself by excellent service as a senior medical officer of the Twenty-Second Special U. S. Naval Construction Battalion, in charge of malaria control for the battalion at U. S. Naval Base Manus from May 18, 1944 to July 31, 1945. "Through his professional skill, capable leadership and unremitting efforts," continued the commendations, "while located in an area in the southwest Pacific where malaria is prevalent, he successfully organized and maintained malaria control at such a high point of efficiency that no cases of malaria infection occurred within his battalion during a period of sixteen months. For his conduct throughout he is commended and authorized to wear the Commendation Ribbon." Dr. Bailey graduated from Indiana University School of Medicine, Bloomington-Indianapolis, and entered the service Sept. 3, 1942.

VETERANS ADMINISTRATION

STAFF APPOINTMENTS AT JEFFERSON BARRACKS HOSPITAL

The Dean's Committee has announced the appointment of 69 residents and attending and consultant physicians at the Veterans Hospital at Jefferson Barracks, Missouri. This committee, comprising four members from Washington University School of Medicine and four from the St. Louis University School of Medicine, is charged with administering the professional services at this hospital. The secretary of the Dean's Committee is Dr. Franklin E. Walton, associate professor of surgery at Washington University School of Medicine.

The attending and consultant physicians who receive appointments must be faculty members of one of the two medical schools, must have seen active war service and be members of their respective specialty boards. The residency appointments are for three years and will apply toward certification in the various specialties. This hospital has 727 beds and has been authorized by the Veterans Administration to establish an additional 500 beds.

PSYCHIATRIC CLINIC FOR VETERANS

The Mental Hygiene Society of Monroe County, Rochester, N. Y., and the Rochester chapter of the American Red Cross jointly sponsored a psychiatric clinic for veterans, which opened last June under the direction of Dr. George R. Lavine. The chief function is the diagnosis and treatment of veterans striving to adjust to civilian life and who present emotional problems for which psychiatric care is indicated. The president of the Mental Hygiene Society, Dr. William A. Sawyer, points out that the clinic is meeting a vital need and that 1947 promises to be an active year.

PERSONALS

Dr. Paul B. Magnuson, Chairman, Department of Bone and Joint Surgery, Northwestern University Medical School, Chicago, is acting assistant medical director for Research and Education, Veterans Administration, Washington, D. C. Dr. Magnuson is a founder-member of the American Board of Surgery, a member of numerous scientific organizations and a member of the Committee on Orthopedic Surgery of the National Research Council.

Dr. Maurice B. Strauss of Newtonville, Mass., formerly chief of medical service at Cushing (army) General Hospital, Framingham, will continue in the same capacity for the Veterans Administration, which took over that hospital October 1. Dr. Strauss served in the war in Hawaii, Saipan and Iwo Jima and was recently released from the army as a lieutenant colonel. He is an associate in medicine at Harvard Medical School and for many years was a member of the Thorndike Memorial Laboratory at the Boston City Hospital.

Dr. Montgomery A. Stuart of Annapolis, Md., a retired captain of the United States Navy Medical Corps, has been appointed to a position in the medical division of the Roanoke, Va., regional office of the Veterans Administration. He is a graduate of the Wayne University College of Medicine, Detroit, and during World War II served in San Juan, Puerto Rico, New York and Norfolk, Va.

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PUBLIC HEALTH SERVICE

FELLOWSHIPS AVAILABLE IN MEDICAL RESEARCH

The United States Public Health Service, Washington, D. C., announces that about 120 one year fellowships in medical research are open to men and women who are graduate science students. These fellowships are part of the program of the National Institute of Health, a unit of the Public Health Service. Fellowships are open to graduates of accredited colleges who have majored in biology, chemistry, dentistry, entomology, physics and other scientific fields. Senior research fellowships awarded to those who hold Ph.D. degrees pay a yearly stipend of $3,000. Junior fellows who receive $2,400 a year must hold a master's degree in science or must have completed the equivalent of a master's degree in postgraduate study. The fellowship may be renewed for a second year. Applications should be sent to the Director, National Institute of Health, Bethesda, Md.

The National Cancer Institute, which operates as a division of the National Institute of Health, also has funds to train about thirty physicians in the diagnosis and treatment of cancer. Under a federally financed program, doctors who wish to specialize in this field may be appointed as trainees and be assigned to authorized nonfederal, nonprofit institutions in various parts of the country.

The Public Health Service also administers fellowships awarded by the state department to health personnel from other American republics and the Philippine Islands. One hundred fellowships will be available between now and the end of 1947 to qualified residents of the Philippines, and from fifteen to twenty fellowships, open through June 30, 1947, to professional persons from other American republics. Applications for these should be sent to the Surgeon General, United States Public Health Service, Washington 25, D. C.

DR. LEWIS R. THOMPSON RETIRES

After thirty-six years in the U. S. Public Health Service Dr. Lewis Thompson, Assistant Surgeon General in the Bureau of State Services, was retired for medical disability on November 1. Born in Indiana in 1883, Dr. Thompson received his M.D. degree from the Louisville Medical College and joined the Public Health Service as an assistant surgeon in 1910. He has been Assistant Surgeon General since 1930 and since 1943 has served as chief and associate chief of the Bureau of State Services. Dr. Thompson has served as scientific director of the International Health Division, Rockefeller Foundation, and as a member of the Division of Medical Sciences of the National Research Council. He was chief of the Medical Division of the U. S. Strategic Bombing Survey in Japan in 1945 and 1946. He organized the National Institute of Health and was its director for many years.

To fill the vacancy left by Dr. Thompson, Dr. Herman E. Hilleboe, who has been chief of the Tuberculosis Central Division since its inception in 1944, has been appointed associate chief of the Bureau of State Services with the rank of Assistant Surgeon General. Senior Surgeon Francis J. Weber, formerly assistant chief of the Tuberculosis Control Division, has been promoted to the rank of medical director and will serve as chief of the Tuberculosis Control Division.

MISCELLANEOUS

NATIONWIDE DRIVE FOR FUNDS FOR NURSES MEMORIAL

The chairman of the Nurses National Memorial, Arthur H. Johnson, announces an intensive nationwide drive, opening November 17 and continuing until shortly before Christmas, to raise $2,000,000 to build and endow a home and center in Washington, D. C., for nurses and medical women of the armed services. Contributions for the fund will be sought from American industry, business and finance and from citizens in all walks of life. Contributions will be gathered by local committees or sent to Nurses National Memorial Headquarters, Washington, D. C.

The Nurses National Memorial will benefit upward of 100,000 women who have served the armed forces. The home will have sleeping rooms for at least 300 women, an assembly room, library, complete kitchen and dining room facilities, class rooms and recreational rooms. Under a plan worked out, the nurses and medical women will enjoy the privileges of the home, paying only the actual cost of meals and room maintenance.

NEW BOARD TO CORRELATE GOVERNMENT SCIENTIFIC ACTIVITIES

President Truman set up on October 17 a new board to correlate the government activities in the field of science and named John R. Steelman to head the group, which will be known as the Presidential Research Board. This group is said to be an administrative substitute for the National Science Foundation, which, according to the Washington *Post*, was stymied in the closing days of the last Congress. The purpose of the new board is to insure that the scientific personnel, training and research facilities of the nation are used most effectively in the national interest.

Mr. Truman said, in part, in his executive order that the nation has a vast reservoir of war accelerated technologic development which must be applied speedily and effectively to the problems of peace, setting up productivity in both industry and agriculture, creation of new farm and factory products and advancement of medical science, and that in creating this board the groundwork is laid for a general plan designed to insure that federal scientific research will promote the most effective allocation of research resources between the universities, research foundations, industry and the federal government. Another objective of the board is to prevent expensive and inefficient overlapping of federal research work.

The twelve board members besides Mr. Steelman include cabinet officers and heads of various government agencies.

CHILDREN'S BUREAU PROJECTS

The Children's Bureau, Washington, D. C., announced on October 16, according to the New York *Times*, that in the near future several maternity care demonstration projects would be established, the first one at Tuskegee, Ala., made possible by appropriations voted by the last Congress under the Social Security Act. The purpose of these demonstrations, it was said, is "to show what might be done in getting comprehensive maternity care to a group of women who now often lack the most elementary care."

The committee of child specialists which recommended the establishment of the maternity care projects also recommended the establishment of blood banks in strategic centers for mothers needing emergency transfusions, providing chest x-ray examinations of all maternity patients to detect tuberculosis and other conditions early in pregnancy, providing funds to hospitals to care for prematurely born infants and setting up systems of care for crippled children who are victims of rheumatic fever, speech and hearing defects, epilepsy and chronic illnesses as well as the orthopedically handicapped.

The Children's Bureau is reported to have said that a team of five professional workers was appointed to travel round the country to visit cerebral palsy centers and that they will report to a national conference to be held at the Children's Bureau before the year ends. The committee recommended also the granting of training fellowships in mental health to teachers in order to offer more mental health services.

PHYSICIANS SEPARATED FROM SERVICE

ARMY MEDICAL CORPS OFFICERS RECOMMENDED FOR/OR RELIEVED FROM ACTIVE DUTY

California

Abramson, Mason H.....San Francisco
Alban, Harry.....Los Angeles
Alberton, Edmund C.....Kentfield
Anderson, Forrest N.....Van Nuys
Baker, Francis J.....Los Angeles
Baker, Harvey W.....Santa Ana
Bower, Ewald A.....Los Angeles
Boyes, Frederick F. Jr.....St. Helena
Bruechert, Stanley S.....Pasadena
Clark, Joseph E.....San Francisco
Cleland, Robert S.....San Marino
Cobb, Byron O.....Oakland
Crowley, John T.....Oakland
Crumrine, Martin H.....Los Angeles
Cundiff, Richard J.....Los Angeles
Dallke, Wendall E.....North Hollywood
Darby, John S.....Los Angeles
Davis, Walter D.....Santa Cruz
Dobson, Connelly M.....Alhambra
Doemeny, Emmerich P.....San Diego
Dreisbach, Robert H.....San Francisco
Factor, Morris.....Los Angeles
Felton, Leland R.....San Francisco
Francis, Carl E.....Los Angeles
Fraser, Fred J.....Oakland
Gay, George C.....Arlington
Ghilotti, Attico E.....Modesto
Gotfredson, Herbert L.....Pasadena
Grimes, Orville F.....San Francisco
Haley, Edgar R.....Santa Monica
Hall, Joseph A. Jr.....Sierra Madre
Hills, Oscar W.....San Marino
Hogan, William J.....Los Angeles
Howard, Lot D. Jr.....San Francisco
Hultgren, Herbert N.....Santa Rosa
Jawetz, Ernest.....San Francisco
John, Donald L.....Los Angeles
Kaplan, Maurice.....San Francisco
Kolb, Felix O.....San Francisco
Lee, Lew H.....Oakland
Loeffler, Robert W.....Los Banos
Maron, Victor.....Los Angeles
Marquess, Marcel J.....Santa Cruz
O'Brien, John T.....Palo Alto
Owen, Samuel B.....San Francisco
Palmer, Richard J.....San Francisco
Peterson, Kenneth E.....Montebello
Rosenberg, Harold.....Beverly Hills
Ruminson, Simon E.....Orangecove
Schmidt, Karl W.....Burbank
Toreson, Wilfred E.....McCloud
Weber, Robert A.....Los Angeles
White, Hugh L.....San Francisco
Wilkinson, Allan Blodgett...Hollywood

Colorado

Marmor, Arthur A.....Denver
Stillwell, Tyler C. Jr.....Greeley

Connecticut

Baker, Philip G.....Winsted
Barile, Albert W.....New Haven
Battenfeld, John L.....Norwalk
Bayne-Jones, Stanhope.....New Haven
Bradley, Edwin T.....New Canaan
Cavalieri, Rinaldo J.....New Britain
Criscuolo, Joseph A.....New Haven
Dakin, Theodore R.....Storrs
Davis, Roger W. Jr.....Windsor
Fien, Irving.....Hartford
Fine, Joseph.....Stamford
Golden, Abner.....Bridgewater
Good, Robert C.....Waterbury
Heery, Francis W.....New Haven
Molnar, George Joseph.....Bridgeport
Perkins, Joseph A.....Hartford
Smallen, Edward L.....New Haven

Delaware

Derickson, Philip G.....Wilmington
Di Cecco, Frank J.....Wilmington
Durham, Davis G.....Wilmington

Georgia

Fort, Chester A. Jr.....Atlanta
Hendry, Wayland M. Jr....Washington

Illinois

Arden, Stanley J.....Chicago
Barron, Charles I.....Chicago
Beckette, Edmund S. Jr.....E. St. Louis
Biesinger, Wilford G.....Chicago
Bock, Harold L.....Elkhart
Boland, John E.....Chicago
Bonnett, Dovell N.....Chicago
Booth, Boyington H.....Vandalia
Boswell, William W.....Rockford
Branch, Robert F.....Chicago
Brazelton, John R.....Chicago
Bromberg, Rudolph.....Chicago
Brophy, Edward J.....Chicago
Brown, Carroll A.....Lincoln
Calosio, Richard T.....Joliet
Campagna, Ettor A.....Chicago
Cammann, Mark F.....Chicago
Carr, Bradley W.....Chicago
Casey, Byron L. Jr.....Park Ridge
Chereck, Edward J.....Chicago
Cody, George L.....Fort Sheridan
Distelheim, Irving H.....Chicago
Drennan, Clyde L.....Polo
Driscoll, Robert E.....Chicago
Eisele, Vincent G.....E. St. Louis
Fant, James R.....Chicago
Farley, Deane M.....Naperville
File, Richard C.....Decatur
Fisher, Seymour.....Springfield
Fogle, Everett S.....Decatur
Foley, Daniel B.....E. St. Louis
Foulke, Robert W.....Spring Grove
Frame, John D. Jr.....Wheaton
Franck, Richard L.....Rock Island
Frantz, Kieffer E.....Chicago
Fricke, Albert F.....Chicago
Fricke, Raymond W.....Dixon
Gaberman, Peter.....Chicago
Garrett, William A.....Grant Park
Gilbert, Harry B.....Chicago
Gill, Thomas A. J.....Chicago
Giovanelli, Ovidio J.....Chicago
Glenn, Robert W.....Chicago
Goldner, Martin G.....Chicago
Goldstene, James K.....Chicago
Grochowski, Ernest M.....Chicago
Handwerger, Irving.....Chicago
Herdener, Russell L.....Moline
Hollowell, Mack W.....Chicago
Horwitz, Irwin D.....Chicago
Hurwich, Jerome J.....Chicago
Jacob, David.....Chicago
Kaplan, Robert.....Chicago
Kaplitz, Sherman E.....Chicago
Kappel, Louis C.....Belleville
Klow, Sidney Deutsch.....Elgin
Krause, Irving S.....Chicago
Lewis, Leo L.....Chicago
Lippert, Robert.....Chicago
Lorant, Eugene.....Chicago
Luke, George R. Jr.....Morris
Mains, Marshall P.....Chicago
Maloney, Edward J.....Chicago
Motto, Salvatore A.....Chicago
Phillips, Melvin W.....Elgin
Rapp, Roy T.....Quincy
Reiner, Herbert M.....Chicago
Roach, William R.....Oak Park
Robin, Sidney W.....Chicago
Sellett, Thomas.....Chicago
Sever, Buel L.....Chicago
Springer, Kurt.....Chicago
Steinbach, Henry F.....Chicago
Strauss, Jerome F. Jr.....Chicago
Tuteur, Werner.....Manteno
Wassermann, Franz W.....Chicago
Widder, Arpad.....Chicago

Indiana

Beluk, Stephen R.....Gary
Bond, William H.....Indianapolis
Bowman, Charles M.....Albion
Boyd, Clarence E.....Indianapolis
Broshears, Kenneth P.....Chandler
Carmichael, Gordon G.....Terre Haute
Clunie, William A.....Corydon
Courtney, John W.....Indianapolis
Couter, William T.....South Bend
Craig, Alexander F.....Gary
Crawford, John A.....Indianapolis
Dagley, Hubert R.....Indianapolis
Davidson, Bernard.....Elkhart
Deming, Jack E.....Indianapolis
Ferguson, Morris R.....Hobart
Fish, James C.....South Bend
Fisher, Gerald E.....Lebanon
Flick, John J.....Indianapolis
Glosson, Jack R.....Rockville
Gripe, Richard P.....Indianapolis
Hodgin, Philip T.....Rockville
Horst, William N.....Crown Point
Hull, Jack D.....Indianapolis
Hyman, Bernard.....Indianapolis
Johnson, Jerome M.....Milltown
Johnston, William H.....Corydon
Viehe, Robert W. Jr.....Evansville
Zink, Robert O.....Indianapolis

Iowa

Berger, William J.....New London
Brush, Frederick C.....Shenandoah
Hoffman, Clifford W.....Des Moines
Maland, Donald O.....Davenport
Moershel, William J.....Homestead

Kentucky

Dean, Melvin L.....Nicholasville
Denham, Ralph M.....Williamsburg
Love, Selby V.....Louisville

Louisiana

McNamee, Harry G. Jr....New Orleans
Mayes, James W.....Kinder

Maine

Cartland, John E. Jr.....Auburn
Munce, Richard T.....Bangor

Maryland

Andrews, Stephen R. Jr.....Elkton
Apter, Nathaniel S.....Baltimore
Beck, Harry M.....Baltimore
Berry, Herbert L.....Baltimore
Bird, Joseph G.....Baltimore
Bowen, Charles V. Jr.....Glen Burnie
Colfer, Richard J.....Baltimore
Cordi, Joseph M.....Baltimore
Cross, Ernest S. Jr.....Baltimore
Daugharthy, Aaron B.....Baltimore
Davis, George H.....Baltimore
Farr, Robert W.....Chestertown
Freeman, Norman R. Jr.....Baltimore
Galvin, Gerald A.....Baltimore
Gaskel, Jason H.....Baltimore
Goldberg, Sylvan D.....Baltimore
Goodman, William.....Baltimore
Gubnitsky, Albert.....Baltimore
Gundersheimer, H. N. Jr.....Baltimore
Hartmann, William L.....Baltimore
Hebb, Donald B.....Baltimore
Hoffman, Lloyd A.....Hagerstown
Johnson, Rolf E.....Hagerstown
Levi, Julian Elliott.....Baltimore
McGough, Thomas F.....Cumberland
Milan, Edward F.....Baltimore
Powers, Hugh W. S. Jr.....Baltimore
Presti, Joseph C.....Baltimore
Tilt, LeRoy W. Jr.....Towson
Tompakov, Samuel V.....Baltimore
Young, John D. Jr.....Baltimore

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PHYSICIANS SEPARATED FROM SERVICE

Massachusetts

Boone, Edward W.....Newton
Boyer, Norman H.....Lexington
Bozzo, Raymond J.....Attleboro
Brown, Robert K.....Boston
Burke, Edward N.....Wakefield
Candis, Dean J.....Chestnut Hill
Carroll, Robert E.....Fall River
Cavalieri, Dominic.....Somerville
Colozzi, Anthony E.....Arlington
Copel, Joseph, W.....Mattapan
Costrino, John J.....Fall River
Dee, John E.....Brockton
DeKruif, Hendrik.....Wellesley
Diamond, Charles A.....W. Springfield
Dick, Vernon S.....Waban
Drinan, Francis W.....Hyde Park
Duffy, John M. Jr.....Wellesley
Emerson, George F.....South Weymouth
Fanger, Herbert.....Brookline
Golden, Isaac.....Chelsea
Goldstein, Stanton L.....Boston
Goldstein, William.....Fall River
Hanley, Daniel F.....Amesbury
Holihan, Joseph P.....Andover
Horowitz, Sol Z.....Boston
Huston, Lewis L.....Longmeadow
Izenstein, Louis A.....Springfield
Kelly, John L. Jr.....Winthrop
Knight, John E.....W. Roxbury
Kreplick, Sumner.....Lynn
London, Irving Myer.....Malden
McDaniel, Lewis T.....Boston
McDonough, James F.....Woburn
Michaels, Joseph J.....Newton Center
Rogers, Horatio.....Newton Centre
Slavin, Albert.....Roxbury
Streeter, Charles C.....W. Somerville
Thompson, Donald R.....Boston
Willis, Albert W.....Lowell
Zielinski, Joseph F.....Holyoke

Michigan

Calkins, Horace N.....Dearborn
Chapnick, Henry.....Detroit
Crissey, Ronald E.....Lansing
Diamante, Paul J.....Nashville
Doty, James R.....Detroit
Evseeff, George S.....Grand Rapids
Haberlein, Charles R.....Detroit
Killins, Charles G.....Ann Arbor
Leach, David.....Detroit
Marion, Donald F.....Detroit
Murphy, George V.....Iron River
Tann, Leo.....Detroit

Minnesota

Davis, George R.....Minneapolis
Dworak, Arthur F.....St. Paul
Gaarde, Frederic W. Jr.....Rochester
Greenspan, Benjamin.....Rochester
Hagen, Wayne Sigvart.....Minneapolis
Hammes, Ernest M.....Rochester
Kaster, John D.....St. Paul
Reid, James W.....So. St. Paul

Missouri

Aufderheide, George S.....St Louis
Berland, Harry I.....St. Louis
Brown, George W.....St. Louis
Carpenter, Emerson M.....St. Joseph
Codnere, John T.....St. Louis
Cornish, James A.....St. Louis
Daly, John R.....Richmond Heights
Davis, Frank L. Jr.....St. Louis
Dougherty, John W.....Kansas City
Elders, William F.....St. Joseph
Enna, Melchior D.....Kansas City
Goldring, David.....St. Louis
Goodman, Nathaniel.....Clayton
Grimm, Ross M.....St. Louis
Grundmann, William H.....St. Louis
Hamlin, Wyeth.....Palmyra
Heimburger, Robert F.....Springfield

Missouri—Continued

Hull, Orville B.....Jefferson City
Mueller, Adolph Reginald.....St. Louis
Murphy, Franklin D.....Kansas City
Niebauer, Walter E.....Kansas City
Nye, Robert S.....St. Louis
Quinn, James H.....Independence
Rindskopf, Wallace Jr.....University City
Robinson, Robert R. Jr.....St. Louis
Sachar, Leo A.....St. Louis
Solomon, Lynn H.....Lebanon

Nebraska

Crawford, William H.....Omaha
Dickinson, Robert H.....Omaha
Everitt, Neill Jay.....Omaha
Hornberger, Evans Z. Jr.....Omaha
McGee, Millard B.....Omaha

Nevada

Baker, John M.....Gardnerville
Jacobs, Herbert N.....Reno

New Hampshire

Burbank, Bernerd H.....Berlin
Bushold, Charles.....W. Lebanon
Chagnon, Maurice E.....Nashua
Mihachik, A. D.....Northwood Narrows

New Jersey

Barker, Richard G.....Montclair
Baum, Sina.....Perth Amboy
Bieber, Gustave F.....South River
Burroughs, Edmund W.....Trenton
Cacchioli, Louis G.....Newark
De Witt, Peter.....S. Orange
Doyle, George F.....Englewood
Finn, William F.....Weehawken
Fisher, Robert G.....Bound Brook
Gambacorta, Otto.....Newark
Griesemer, Laurence C.....Roselle
Griffin, William M.....Hackensack
Grubin, Harold.....Newark
Hopping, John S.....Whippany
Krakauer, Joseph S.....Paterson
Lake, George L.....Newark
Levitov, Leo.....Jersey City
McGeary, John A.....Hillside
Manrodt, Kurt Jr.....Newark
Mook, John Milton.....Metuchen
Perlini, A. G. Richard.....Palisades Park
Perrault, Richard P.....Plainfield
Sauerbrunn, Bertram J. L.....Elizabeth
Scales, Harold L.....Jersey City
Spath, William H.....Hoboken
Stemmerman, Grant N.....Bogota
Szafir, Paul.....Pleasantville
Waksman, Byron H.....New Brunswick
Wisham, Lawrence H.....Closter
Wolfe, Edward E.....Teaneck

New York

Adler, John J.....Theresa
Alpert, Seymour.....Mt. Vernon
Anderson, Charles L.....Jaskson Heights
Aquilina, Joseph T.....Buffalo
Artz, Richard W.....Flushing
Asch, Jerome K.....Freeport
Audino, Herman D.....Flushing
Barone, Carmelo V.....Poughkeepsie
Baronowsky, Walter.....New York
Bartlett, George T.....Borodino
Beim, Norbert.....New York
Bergen, Charles T.....New York
Berk, Alexei N.....New York
Besancon, Philip H.....Syracuse
Bilecky, William B.....New York
Bliss, Eugene L.....New Rochelle
Bobb, Harry J.....New York
Bove, Joseph M.....Yonkers
Breedis, Charles.....Mays Landing
Bullen, Stearns S. Jr.....Rochester
Burdick, Daniel.....New York
Carter, Clarence S.....Freeport

New York—Continued

Carty, William W.....Brooklyn
Casagrande, Peter A.....Buffalo
Cataffo, Arthur A.....New York
Chasnoff, Julius.....New York
Chenowith, Maynard B.....Jackson Hts.
Chesney, John G.....New York
Christensen, John E.....New York
Chu, Fey.....New York
Clayman, Sigmund J.....Forest Hills
Cohen, Henry S.....Brooklyn
Coleman, Joseph A.....New York
Collins, Vincent J.....New York
Danos, Bela.....Long Island City
Dantzig, Louis.....New York
Darling, Arthur P.....Geneva
Demy, Nicholas G.....New York
De Simone, Nicholas.....Bronx
Di Fiore, John A.....New York
Donley, Robert S. Jr.....Buffalo
Donovan, John T. Jr.....Buffalo
Drexler, Herman.....Brooklyn
Dunn, James M.....Schenectady
Eckardt, Lisgar B.....New York
Elis, Haskel O.....New York
Ettinger, Arthur.....New York
Eyre, John D Jr.....New York
Fader, David E.....New York
Failing, Willard N.....Brooklyn
Fallon, John A.....New York
Farr, Hollon W.....New York
Faville, Rush B.....Dolgeville
Fishman, Irving M.....Queens Village
Fitzpatrick, John F.....Flushing
Fitzpatrick, Raymond J.....New York
Fletcher, Richard S.....Buffalo
Friedlander, Ernest O.....New York
Friedman, Arthur J.....Arverne, L. I.
Garfield, Frederick M.....New York
Garvin, William J.....Yonkers
Gasper, Major W.....Gorham
Generales, Constantine D.....New York
Genvert, Harold.....New York
Gold, George.....Bronx
Goliger, Jack Jason.....Brooklyn
Graffeo, Louis W.....Brooklyn
Grauer, Franklin H.....New York
Gravina, Gerard C.....Brooklyn
Halperin, Louis.....New York
Hamblin, William N.....Syracuse
Hammel, Joseph V.....Kenmore
Hammond, John D.....Auburn
Handin, Irving L.....Albany
Harer, Adolf E.....Buffalo
Hayward, Vincent S.....New York
Heinemann, Alfred D.....Sinclairville
Hoffman, Paul F.....Buffalo
Joshua, Manfred B.....New York
Katz, Albert B.....New York
Katz, Hyman M.....Brooklyn
Kennedy, Sidney R. Jr.....Buffalo
Kotkin, Leonid.....Brooklyn
Kramer, Milton L.....New York
Lanzone, Joseph A.....Bronx
Lawton, James J. Jr.....Brooklyn
Leis, Henry P.....Saranac Lake
Levy, Benjamin F. Jr.....Elmira
Lichtman, Harry S.....Brooklyn
Lo Pinto, Francis J.....Bronx
MacDueeie, William E.....Buffalo
Mackles, Abraham.....Brooklyn
Merenstein, Hyman.....Brooklyn
Mertz, John Sherman.....Albany
Moss, Armand H.....New York
Most, Harry.....New York
Murphy, James M.....Syracuse
Nadel, Eliah M.....Brooklyn
Oshlag, Abraham M.....New Rochelle
Penhale, William D.....New York
Podolnick, Aaron.....New York
Raccuia, Vincent V.....Brooklyn
Rapaport, Henry.....Whitney Point
Rosenthal, Benjamin J.....Brooklyn

PHYSICIANS SEPARATED FROM SERVICE

New York—Continued

Sapio, Fred J. ..... Brooklyn
Scalise, Anthony J. ..... Brooklyn
Schilling, Fred J. Jr. ..... Garden City
Shiff, Nathan A. ..... New York
Stiles, William W. ..... Rochester
Titus, Frederick P. ..... Glen Cover
Trattler, Arnold J. ..... Freeport
Vitale, Ronald F. ..... Brooklyn
Whittier, John R. ..... New York
Wickler, Gerhard S. ..... New York
Wildenberg, Jesse B. ..... Forest Hills
Winer, Marvin N. ..... Buffalo
Zeuvener, William ..... Brooklyn
Zimmerman, Benjamin ..... Bronx

North Carolina

Andrews, Vernon L. ..... Mount Gilead
Berry, Francis X. ..... Greensboro
Bizzell, James W. ..... Goldsboro
Byrum, Clifford C. ..... Tyner
Cecil, Arthur B. Jr. ..... Durham
Conrad, Clyde D. ..... Winston-Salem
Craig, Louis A. Jr. ..... Raleigh
Crissman, Clinton S. ..... Pittsboro
Ferguson, Guerrant H. Jr. ..... Raleigh
Graham, John B. ..... Goldsboro
Jones, Donnie H. Jr. ..... Selma
Kessler, Joseph ..... Leaksville

Ohio

Abbott, Henry L. ..... Tiffin
Beckerman, Samuel ..... Cleveland
Berke, Meyer ..... Cleveland
Boehmer, Henry E. ..... Parma
Bonser, William H. ..... Toledo
Brody, Daniel A. ..... Cleveland
Brown, Harold E. ..... Columbus
Cattell, James P. ..... Steubenville
Clark, Charles F. ..... Columbus
Cooper, Jack R. ..... Columbus
Correll, Paul H. ..... Relay
Craig, Benjamin R. ..... Cleveland
Crawford, Henry A. ..... Dayton
Dalton, William J. ..... Cincinnati
D'Amore, A. R. T. ..... Youngstown
Dewald, Donald W. ..... Cleveland
Dugan, David J. ..... Lakewood
Ebenstein, Benno ..... Columbus
Egeberg, Roger O. ..... South Euclid
Fintz, Ralph J. ..... Cleveland
Foley, James M. ..... Columbus
Froug, Charles ..... Dayton
Gambrel, Francis J. ..... Youngstown
Geiser, Frank M. ..... Cleveland
Gelbman, Frank ..... Youngstown
Geyer, Joseph H. ..... Columbus
Goldberg, Lawrence C. ..... Cincinnati
Grace, Ralph S. ..... Hamilton
Green, Robert S. ..... Wyoming
Greever, William N. ..... Woodville
Grill, Winfred, E. ..... Toronto
Hale, Frank A. ..... Cincinnati
Harris, Henry C. ..... Dayton
Harris, Jack L. ..... Middletown
Heller, Glenn H. ..... Akron
Hertzberg, Joseph M. ..... Toledo
Hill, Eugene S. ..... Canton
Hochwalt, Jerome P. ..... Lebanon
Jones, Mason S. ..... Columbus
Kohn, Paul M. ..... Cleveland
Laufer, Maurice W. ..... Yellow Springs
Linz, Vincent Harold ..... Cincinnati
Mamlok, Hans W. ..... Toledo
Murrey, Charles A. ..... Caldwell
Noble, Keith C. ..... Cleveland
Rack, Frank J. ..... Cleveland
Shapiro, Nathan ..... Cincinnati
Westbrook, Edwin R. ..... Warren
Wolf, Arthur F. ..... Valley City

Oklahoma

Charnas, Sidney ..... Oklahoma City
Kempker, Adele C. ..... Oklahoma City

Oregon

Aumann, Kurt W. ..... Portland
Beckwith, Harry G. Jr. ..... Portland
Bramwell, Donald M. ..... Corvallis
Davis, William J. ..... Portland
Hafner, Paul G. ..... Portland
Schneider, Leo. ..... Portland
Thomas, Evan W. ..... Portland

Pennsylvania

Allsopp, Richard C. ..... Pittsburgh
Anderson, James T. ..... Beaver
Andolina, Stephen ..... Pittsburgh
Anstine, Dale T. ..... York
Bailey, John H. Jr. ..... Meadville
Baker, Daniel R. ..... Sayre
Bantly, Victor S. ..... Johnstown
Baum, Oscar E. ..... Philadelphia
Berger, Norman S. ..... Archbald
Bonucci, Bruno L. ..... Star Junction
Bowie, Morris A. ..... Bryn Mawr
Bowman, Thomas E. Jr. ..... Harrisburg
Bush, Louis G. ..... Reading
Carapella, John D. ..... Allentown
Cessna, Gerald H. ..... Cresson
Chagan, Franklin A. ..... West Manayunk
Christ, Nicholas J. ..... Philadelphia
Churchill, Robert W. ..... Ben Avon
Coane, Morton R. ..... Philadelphia
Coppolo, Bernard L. ..... Weedville
Curtis, Harrison E. ..... Corry
Davitch, Leonard S. ..... Philadelphia
DePiero, Nicholas ..... New Castle
Drogowski, Matthew J. ..... Freeland
Evans, Jon P. ..... Forty Fort
Fetcho, William V. ..... Jennertown
Finkbeiner, John A. ..... Harrisburg
Fisher, Harry L. ..... United
Fornwalt, George R. ..... Lansdowne
French, Arthur B. ..... Philadelphia
Fried, Paul H. ..... Philadelphia
Gartland, George D. ..... Johnstown
Gaydos, John D. ..... Berwick
Gerhart, Lewis Warren ..... Philadelphia
Gibbons, Robert J. ..... Pittston
Gibson, Edgar T. ..... Springfield
Gillis, John A. ..... Wayne
Godfrey, Lincoln Jr. ..... Merion
Goff, John P. ..... Coraopolis
Green, James L. ..... Tarentum
Gregory, Robert E. ..... Pittsburgh
Grove, Daniel D. ..... New Cumberland
Hamburg, Allen E. ..... Hatboro
Hamilton, James R. ..... New Bloomfield
Hauck, Francis A. ..... Philadelphia
Hess, Ivan W. ..... Royersford
Houston, Robert R. ..... Harrisville
Johnson, Carl G. ..... California
Kaye, Robert. ..... Philadelphia
Linhart, Randolph W. ..... Jeanette
Manges, Willis E. ..... Philadelphia
Marino, Joseph N. ..... Scranton
Metzger, Charles W. ..... Bellevue
Moriarty, Charles A. ..... Philadelphia
O'Brien, William R. ..... Narberth
Sabol, John B. ..... Freeland
Saul, Robert J. ..... Reading
Scoglietti, Vincent C. ..... Pittsburgh
Semans, James H. ..... Uniontown
Semenza, Nicholas J. ..... Old Forge
Sharpless, Isaac ..... Bryn Mawr
Simons, William M. ..... Lane
Skversky, Norman J. ..... Philadelphia
Smith, Ralph W. ..... Willow Grove
Specter, Jacob. ..... Philadelphia
Sutton, Edward L. ..... Bellevue
Tolochko, Myer H. ..... Johnstown
Van Meter, J. Ray ..... Elkins Park
Waldron, Jerome M. ..... Philadelphia
Weiss, Sidney ..... Philadelphia
White, James C. ..... West Newton
Zwerling, Herman ..... Philadelphia

Rhode Island

Kay, Maurice N. ..... Providence

South Dakota

Hohn, Theodore A. ..... Huron

Tennessee

DeSautelle, William A. ..... Knoxville
Duff, Price H. ..... Crossville
Haltom, Thomas B. ..... Nashville

Texas

Bornstein, David M. ..... Dallas
Celaya, Albert ..... Brownsville
Craddock, Wallis L. ..... Austin
Duplan, Don C. Jr. ..... Port Arthur
Eisen, Herman M. ..... Tyler
Eldridge, Irving C. ..... Ft. Worth
Fisher, Charles I. ..... Austin
Garren, John T. Jr. ..... Turnersville
Grafa, Barney G. ..... Midland
Holland, Joseph W. ..... Denton
Knight, William R. III ..... Houston
Lamberth, Ivey E. ..... Houston
McCormick, Thaddeus ..... Austin
Miller, Samuel I. ..... Houston
Moyar, John B. ..... Fort Worth
Mulloy, Mary E. ..... Stephenville
Pearce, John Y. ..... Ballinger
Wilkins, Afton N. ..... Conroe

Vermont

DesAutels, Eugene J. ..... Burlington

Virginia

Gililland, Norman A. ..... Alexandria
Mayo, Lemuel E. Jr. ..... Portsmouth

Washington

Bede, Brandt A. ..... Tacoma
Hurst, Cecil ..... Tacoma
Leavitt, Harry C. ..... Yakima
McNutt, Harlan P. Jr. ..... Port Angeles

West Virginia

Epperson, John W. W. ..... Winona
Fisher, Conrad M. ..... Newell

Wisconsin

Bunkfeldt, Frederick Jr. ..... Milwaukee
McNamee, James R. ..... Milwaukee

Wyoming

Beck, Frederick W. ..... Cheyenne
Crum, Kenneth O. ..... Rawlins

Bermuda

Ashdown, David S. ..... Warwick East

Hawaii

Ito, William S. ..... Honolulu
Okumoto, Pete T. ..... Honolulu

Mexico

Pulido, Venustiano ..... Mexico City

Puerto Rico

Carrasquillo, Modesto ..... Guayama
deHostos, Eugene M. ..... San Juan
Isales, Luis M. ..... San Juan
McConnie, Randolph J. ..... Fajardo
Miranda, Angel Naftali ..... Morovis
Morales, Juan E. ..... Mayaguez

Canal Zone

Ginsburg, Bearl L. ..... Gamboa

Canada

Hamren, Merle L. ..... Ohaton Alberta
Lax, Aaron ..... Toronto
Peikes, Irwin L. ..... Toronto
Wise, Solomon S. ..... Toronto

Cuba

Pelaez, Manuel J. ..... Havana

Scotland

Mahoney, Frank William ..... Edinburgh

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MEDICAL OFFICERS RELEASED BY THE NAVY

NAVAL RESERVE MEDICAL OFFICERS RECOMMENDED FOR RELEASE FROM ACTIVE DUTY

Alabama

Baria, Wm. H.....Mobile
Dumming, Everette J.....Linden
Grasberger, Joseph C.....Birmingham
Harris, Leon E.....Banks
Harsh, John F.....Birmingham
Herrod, Henry G. Jr.....Plantersville
Keller, Frank G.....Birmingham
Nelson, Robert J.....Birmingham
Thomas, Walton D.....Montgomery

California

Abels, Daniel W.....Los Angeles
Allen, James R.....Oakland
Bacigalupi, Alfred A.....San Francisco
Baker, Charles R.....Los Angeles
Barron, Gilbert.....San Diego
Beddoe, Paul.....Alhambra
Bennett, Leslie R.....Alhambra
Berryman, John S.....So. Pasadena
Blood, Russell H.....Beverly Hills
Byrne, Harold J.....La Jolla
Caldwell, William G.....Los Angeles
Camp, Turner.....Long Beach
Cannon, Frank M.....Bolinas
Clark, William H.....Palo Alto
Dasler, Adolph F.....Vallejo
Dennehy, Timothy J. Jr.....Los Angeles
Dennis, Robert.....Berkeley
Diamond, Stanley.....Hemet
Droz, Adolphus K.....San Fernando
Edwards, Wm. M. Jr.....San Rafael
Freeman, Richard V.....Los Angeles
Golton, Richard S.....Berkeley
Gore, Arthur L.....Riverside
Griggs, James Y.....San Diego
Hansen, Oluf S.....Los Angeles
Harrison, Harry L. Jr.....San Francisco
Hill, Harold M.....San Diego
Hinman, Frank Jr.....Redwood City
House, Leland R.....Los Angeles
Johnson, William M.....Pasadena
Jones, Peter H.....Fresno
Keating, Robert E.....Long Beach
Larocca, Robert A.....San Jose
Lewis, Alvin E.....Los Angeles
Lippman, Harvey N.....Los Angeles
Lipsett, Melvin M.....Piedmont
Liston, Eugene P.....Berkeley
McCorkle, James K.....Berkeley
Meiklejohn, Gordon.....Berkeley
Miles, Hoyt B. Jr.....Hollywood
Mitchell, Allen C.....Long Beach
Mitchell, Thomas T.....Placerville
Mohr, Selby R. Jr.....San Francisco
Mullen, James K.....San Francisco
Nelson, Norman M.....N. Hollywood
Ortega, Leonard R.....Berkeley
Pahl, Blythe W.....Los Angeles
Parker, Donald DeW.....Pasadena
Ravenscroft, James W.....San Diego
Respini, Charles J.....Los Angeles
Roberts, James E.....Los Angeles
Ruddock, John C.....Los Angeles
Smith, William R.....Wilmington
Sooy, Francis A.....San Francisco
Thompson, Richard C.....Bakersfield
Thompson, Roderick A. I.....Pasadena
Tyrrell, Gordon C.....Inglewood
Warne, Ralph C.....Doheny Park
Wasemiller, Elmer R.....Los Angeles
Wilbur, William A.....Oakland
Williamson, Craig.....Upland
Wilson, James N.....San Bernardino

Colorado

Biegel, Albert C.....Denver
Brown, Woodrow E.....Eagle
Demshki, Andrew E. Jr.....Denver
Hogsett, Glade C.....Longmont
Moore, John H.....Trinidad
Sisson, William R.....La Junta

Connecticut

Agrin, Alfred.....New London
Berneike, Robert R.....New Haven
Dean, Peter M.....Greenwich
Epstein, Joseph I.....Meriden
Esposito, Joseph J.....Bridgeport
Fitzpatrick, Eugene J.....New Haven
Gelinas, Edmund J.....New London
Havill, Rupert A.....New Haven
Lanman, Jonathan T.....Stamford
Lear, Harold A.....New Haven
Lee, William.....Madison
Luddy, John R.....Bridgeport
Menousek, Joseph A.....Plainville
Phillips, Nicholas T.....Norwich
Scully, Michael R.....Bridgeport
Sheppard, Haynes W.....New Haven
Sims, Ethan A. H.....New Haven
Stewart, William W.....Stamford
Tulin, George A.....Hartford
Woodruff, Calvin W.....Hamden
Zdanis, Albert S.....Oakville
Zeluff, George W.....Bridgeport

District of Columbia

Brill, Warren D.....Washington
Donnally, Reamur S.....Washington
Ethridge, Clayton B.....Washington
Forester, Charles F.....Washington
Garby, Rodes C.....Washington
Gray, Paul H.....Washington
Kennedy, John A.....Washington
MacDonald, Gordon R.....Washington
Willson, Prentiss Jr.....Washington

Florida

Atkinson, Horace D.....Orlando
Blount, Frederick A.....Pensacola
Daniel, Roy D.....Fort Myers
Hinchey, John J.....Perry
Hutson, James M. J.....Miami
Mason, Donald G.....No. Miami
Mimms, John M.....Ocala
Wertheim, Arthur R.....Miami
Williams, Norman E.....Jacksonville
Wright, Jack L.....Miami
Zieve, Sanford L.....Orlando

Georgia

Anthony, Lynn E.....Macon
Benton, Charles C.....Atlanta
DuPree, John T.....Gordon
Freeman, Thomas R.....Albany
Harrin, Thomas S.....Rome
Holsenbeck, George H.....Winder
King, Coleman T.....Covington
Lester, William M.....College Park
Lever, Joseph E.....Sandersville
McFarlane, John W.....Atlanta
Murphy, Michael V. Jr.....Atlanta
Philpot, DeSaussure F. Jr.....Augusta
Powell, Fincher C.....Atlanta
Ricketson, George M.....Broxton
Sanders, Floyd R. Jr.....Decatur
Turner, John R.....Gay
Weinberg, Seymour P.....Atlanta
Williams, John W. Jr.....Augusta

Illinois

Affhauser, Robert M.....Chicago
Boyd, Herbert L.....Lewiston
Carroll, James P.....Chicago
Davis, Colbert S.....Chicago
Davis, James W.....W. Frankfort
Desulis, Bruno A.....Chicago
Drucker, Edgar F.....Chicago
Eckhardt, Richard D.....DeKalb
Fitz, Casimir E.....Chicago
Fleischner, Charles A.....Chicago
Frazier, Shervert H. Jr.....Harrisburg
Glassman, Harold S.....Chicago
Goldsmith, David A.....Chicago

Illinois—Continued

Golseth, James G.....Chicago
Gray, Arthur M.....Chicago
Greening, Roy R.....Chicago
Greenwald, Bernard M.....Chicago
Griffin, Joe J.....Ramsey
Halperin, Bernard A.....Oak Park
Hartley, George T.....Bradford
Hendricks, Allen R.....Oak Park
Henry, Frank C.....Decatur
Huber, Paul R.....Chicago
Jacobson, Moses A.....Chicago
Jampolis, Robert W.....Chicago
Jones, Morris H.....Chicago
Joranson, Robert E.....Chicago
Joslyn, Arthur E. Jr.....Maywood
King, W. I.....Greenup
Krebs, Edwin G.....Greenville
Langstaff, John M.....Fairbury
Larson, William D.....Chicago
Levy, George.....Chicago
Littman, Armand.....Chicago
Lockhart, Charles E.....Witt
Mafit, Trowbridge R.....Chicago
Martin, Albert C.....Chicago Hts.
Mason, Alfred B.....Oak Park
Moore, Robert D.....Chicago
Nichols, Ira G. Jr.....Champaign
Nanzig, Reinard P.....Wilmette
Nardi, George L.....Chicago
Phillips, Donald C.....Oak Park
Rowlette, Raymond S.....Chicago
Rubinfine, David L.....Chicago
Schlageter, Charles W.....Chicago
Schmidt, Paul M.....Argo
Spurr, Charles L.....Chicago
Stenborg, Walter P.....Waukegan
Sullivan, Daniel F.....East St. Louis
Tanner, Lewis W.....Danville
Thomas, Gerald J.....Chicago
Thompson, Wilbur L.....Decatur
Todd, William H.....Laurenceville
Tourney, Robert L.....Quincy
Tuthill, John W. G.....Evanston
Ursin, John.....Chicago
Von Leden, Hans W.....Chicago
Waidzunas, John F.....Chicago
Whitehead, William H.....Chicago
Wilson, Charles F.....Harrisburg

Indiana

Arata, Justin E.....Fort Wayne
Bajo, Michael D.....E. Chicago
Beck, Evard M.....Anderson
Brundza, Frank L.....Peru
Burman, Richard G.....Jeffersonville
Bussard, Frank W.....South Bend
Duemling, Werner W.....Fort Wayne
Eastman, Joseph R. Jr.....Indianapolis
Elliott, J. C.....Middlebury
Ernst, Clifford E. Jr.....Indianapolis
Goodrich, Albert.....Indianapolis
Jamison, Robert W.....Indianapolis
Jay, Robert P. Jr.....Kendallville
Kammen, Robert.....Indianapolis
Lebamoff, Alexander T.....Ft. Wayne
Rothstein, Emil.....Rockville

Iowa

Berg, John W.....Storm Lake
Bernatz, Philip E.....Decorah
Crew, Morton R.....Clearfield
Hasbrouck, Cecil F.....Waterloo
Hertzler, Jack H.....Burlington
Isham, Robert Benjamin.....Waverly
Knouf, Clare E.....Des Moines
Magdsick, Carl C. Jr.....Charles City
Painter, Robert C.....Dubuque
Quarton, Gardner C.....Cedar Rapids
Ringrose, Edward J.....Iowa City
Smith, Alfred N.....Stacyville
Walker, John R.....Iowa City

MEDICAL OFFICERS RELEASED BY THE NAVY

Kentucky

Blair, Murvel C.....Louisville
Forbes, James S.....Hopkinsville
Perry, Joseph Q.....Louisville
Reynolds, Samuel E.....Morehead
Spencer, William L. Jr.....Maysville

Louisiana

Banks, Tyre E. Jr.....Colfax
Bridges, Ronzel H.....Shreveport
Byrne, George W.....New Orleans
Consigny, Paul M.....New Orleans
Crawford, Edward J. Jr.....Shreveport
DesBordes, Lee H.....New Orleans
Dupont, Hanson L.....Houma
Edwards, Edwin W.....New Orleans
Flores, Adolph A. Jr.....Pelican
Glasscock, Robert E.....Shreveport
Griffon, Joseph P.....Baton Rouge
Harris, Clifton E.....Pineville
Kass, Myron.....New Orleans
Le Tard, Francis X.....Kentwood
McCirvey, Norborn R.....Ruston
Menendez, Charles V.....New Orleans
Mogabgab, William J.....New Orleans
Rankin, Samuel G.....Bogalusa
Roy, Elliott C.....Mansura
Ruys, Frank C.....New Orleans

Maryland

Chaput, Charles D.....Baltimore
Classen, John N.....Baltimore
Crosby, Robert M. M.....Baltimore
Elias, Thomas G.....Frostburg
France, Richard.....Churchill
Greif, Roger L.....Baltimore
Kleiman, Allen.....Baltimore
Krulevitz, Keaciel K.....Baltimore
Leighton, Alexander H.....Baltimore
Lewis, Richard Q.....Annapolis
Mace, Albert J.....Baltimore
Mountcastle, Vernon B. Jr.....Baltimore
Novak, Edmund R.....Baltimore
Padgett, Vernon M.....La Plata
Sadler, Henry H., Jr.....Annapolis
Sussman, Abram A.....Baltimore
Thompson, Raymond K.....Riverdale
Walsh, William B.....Takoma Park

Massachusetts

Argoff, Arthur.....Worcester
Ayres, John C.....Brighton
Bloniare, Aloysius A.....Adams
Bottomley, George T.....Boston
Clauser, William J.....Boston
Doyle, John J.....W. Medford
Dretler, William M.....Marblehead
Ferrera, Charles J.....E. Boston
Fitzgerald, James A.....Brookline
Gilbert, Jerome L.....Worcester
Gordon, Bernard S.....Dorchester
Heffernan, Edward V.....Canton
Hopgood, Winthrop C.....Brockton
Howe, William W. Jr.....Dalton
Jewett, Everett P. Jr.....Worcester
Killam, Arthur R.....Winchester
Kuekan, James R.....Whitinsville
Lundberg, Robert N.....Gloucester
McCann, Donald S.....Attleboro
Machaj, Theodore S.....Ipswich
Mosig, William.....Amherst
Murphy, Edward S. Jr.....Belmont
Parisi, Anthony J.....W. Springfield
Petti, Michael A.....Brockton
Quinn, Edward M.....Lowell
Reid, David H.....Melrose
Rogers, William P. Jr.....Fall River
Sabino, Anthony W.....Newtonville
Salhanick, Louis.....Fall River
Schultz, Edwin D.....Wellesley
Thompson, C. A.....Newton Highlands
Verde, Aldo G.....Dorchester
Welcker, Merrill L.....Boston
Winchell, Gordon D.....So. Lincoln
Yeomans, Andrew.....Brookline

Michigan

Albers, Millard J.....Detroit
Altshuler, Charles H.....Detroit
Amstutz, Kenneth N.....Ann Arbor
Andros, George J.....Ann Arbor
Bailey, William A.....Detroit
Bergen, Paul M.....Norway
Brewer, William A.....Detroit
Brundage, Robert D.....Ypsilanti
Burkhardt, Henry Jr.....Detroit
Callander, Chalmer G.....Ann Arbor
Dodds, Max E.....Flint
Duffie, David P.....Central Lake
Dupernell, Robert O.....Detroit
Eby, Edwin G.....So. Haven
Flucksa, George.....Detroit
France, Charles J.....Detroit
Granger, George R.....Detroit
Gregory, Charles F.....Norwayne
Hayes, Laurence W...Jr....Howard City
Hendricks, Frank R.....Detroit
Jacobs, John.....Detroit
Johnson, James A.....Ann Arbor
Jones, William S. Jr.....Menominee
Judd, Alvin E.....Lansing
Kahn, Oscar B.....Detroit
Kee, Charles E.....Gladstone
LaRiviere, Joseph O.....Mt. Clemens
Latimer, Frederick R....Highland Park
Lombardini, Victor B.....Detroit
Montgomery, J C. Jr..Grosse Pte. Woods
Nedwicki, Edward G.....Detroit
Newman, John W.....Detroit
Parsons, Robert J.....Ann Arbor
Poppen, Donald V.....Lansing
Rasmussen, Richard A.....Grand Rapids
Rosen, Harold M.....Detroit
Seltzer, Sol N.....Marion
Simson, Clyde B.....Kalamazoo
Sparks, Harvey V.....Flint
Tansey, John J.....Ann Arbor

Minnesota

Ashe, William M.....Rochester
Cohen, Bernard A.....Minneapolis
Cooper, John P.....Minneapolis
Doherty, Elmer M.....Morgan
Drake, Ermerson H.....St. Paul
Gentling, Allen A.....Rochester
Hauser, Cyril H.....Luverne
Kloos, Edward C.....Rochester
La Fond, Edward M.....Little Falls
Lufkin, Charles D.....Northfield
Lytle, Francis T.....Minneapolis
McLaughlin, Blaine E.....Winona
Masson, James K.....Rochester
Olson, Carlton K.....Minneapolis
Regan, John J.....Minneapolis
Rowland, Willard D.....Rochester
Thompson, John J.....Winona
Thysell, Nels J.....Moorhead
Werner, George.....Minneapolis

Mississippi

Ball, Robert C.....Richton
Colmer, William M. Jr.....Pascagoula
Dunavant, William D.....Pontotoc
Felknor, George E. Jr.....Meridian
Fuller, Josiah.....Canton
Golden, Max L.....Laurel
Lane, Charles S., Jr.....Hattiesburg
McKinnon, Joseph G.....Hattiesburg
Messina, Aurelio P.....Vicksburg
Overstreet, John W. Jr.....Starkville
Roberts, Curtis M.....New Albany
Smith, Francis M. Jr.....Vicksburg
Staggers, Samuel R.....West Point
Wallace, Fred C.....Amory

Montana

Davis, Jasper W.....Cut Bank
Kuffel, Leonard E.....W. Missoula
Liest, Leonard J.....Fort Peck

Nebraska

Alevezos, George J.....Omaha
Burklund, Charles W.....Sutherland
Coppoc, Loran E.....Seward
Cowger, Robert C.....Hastings
Dahlstet, John P.....Bertrand
DeMay, George H.....Grand Island
Green, Norman E.....Lincoln
Griffith, Paul C.....Omaha
Hinrichs, William A.....Lincoln
Jackson, Ira J.....Omaha
Kobza, Valerian V.....Omaha
Ragan, Lloyd E.....David City
Rankin, Emmett C.....York
Scofield, John H. Jr.....Lincoln
Steffens, LaVerne C.....Lincoln
Turkel, Stanley.....Omaha
Woodruff, Bradley B.....Grand Island

New Jersey

Allen, Frederick W. Jr.....Rutherford
Ballinger, Charles S.....Moorestown
Borino, John W.....Jersey City
Browne, Frank S.....N. Plainfield
Collier, James F.....Grenloch
Cook, Gordon C.....Denville
Crabb, Gordon.....Upper Montclair
Deans, Robert D.....Ridgewood
De Persio, Robert E.....Milburn
De Vito, Alfred T.....Bradley Beach
Duey, John O.....Merchantville
Duffy, Robert W.....Hasbrouck Hts.
Elder, William W. Jr.....Montclair
Epstein, Martin.....Trenton
Foley, James G.....Bernardsville
Frohbose, William J.....Plainfield
Gelbin, Ruehl M.....Butler
Gian-Grasso, Joseph A.....Camden
Greenspan, Francis S.....Perth Amboy
Gresser, Newton H.....W. Englewood
Haines, Henry L.....So. Orange
Hall, Ralph A.....Westfield
Hamill, John F.....Jersey City
Hofstra, Peter C.....Paterson
Hopper Guy R.....Plainfield
Hopper, John B.....Ridgewood
Johnson, Ernest E.....Garfield
Kershner, Maurice I.....Newark
Larsson, Evert A.....Trenton
Lawton, Richard W.....Ridgewood
Lerman, Frederick.....Elizabeth
Levy, Norman J.....Highland Park
Looloian, Mehran W.....E. Orange
Martland, Harrison Jr.....Newark
Niemiera, Alexander K.....Middleton
Perkins, Rex B.....New Egypt
Post, Charles F.....Bloomingdale
Quittner, Howard.....Budd Lake
Rosenthal, Alfred E.....Bayonne
Steller, Frederick C.....Butler
Strassburger, Paul J. Jr.....Caldwell
Tilney, Robert W. Jr.....Far Hill
Trosinski, Alfred J.....Jersey City
Urban, George J.....Woodbridge
Van Deusen, Hiram B.....Newark
Vargish, Jacob J.....Weehawken
Wagner, Richard F.....Englewood
Wannemacher, Paul H.....West Orange
Witman, H. J. Jr.....Freehold
Woodruff, John H.....Clifton

New Mexico

Evans, Kline W.....Carlsbad

New York

Agrin, Irving N.....Long Island City
Aune, Edwin F.....Brooklyn
Bedell, Wallace C.....Albany
Bergida, Jerome J.....Richmond Hill
Black, Samuel P. W.....Brooklyn
Blom, Gaston E.....New York
Bodkin, Richard L.....Brooklyn
Bradford, Joseph K.....Staten Island
Brookes, Robert D.....New York
Chaitin, Horace.....New York

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MEDICAL OFFICERS RELEASED BY THE NAVY

New York—Continued

Chibnick, Joseph.....Jamaica
Child, Charles G. III.....New York
Clayton, Samuel C. E. Jr...Bayside, L. I.
Collins, Edmund M.....Buffalo
Cronk, Gary A.....Fayetteville
Culbert, Robert W.....Plandome, L. I.
Cummins, John P. J. Jr.....Ticonderoga
Curnen, Edward C. Jr.....Bronxville
Del Rey, Alfred J.....Brooklyn
Eckel, Robert E.....Buffalo
Eckelman, John H.....Carthage
Flood, Hugh E.....Bronx
Gabrielson, Robert M.....Brooklyn
Ginsberg, Irwin A.....New York
Goldman, Morris.....Brooklyn
Goller, John J.....Staten Island
Grimshaw, John A.....Rockville Center
Hall, William W. Jr.....Cape Vincent
Hartwig, Arthur R.....Rochester
Hayes, James J.....Brooklyn
Healy, Robert E.....Brooklyn
Hoes, John S.....Kinderhook
Holzman, Ira J.....New Gardens
Homan, William E.....Brooklyn
Hubbard, Robert J.....Brooklyn
Jessup, Robert P.....Great Neck
Johnson, Ben B.....Long Island
Johnson, Spencer.....Brooklyn
Jones, Cyril J.....New York
Kaufman, Jerome J.....Brooklyn
Kelly, Charles W.....Brooklyn
Kern, Arthur B.....Brooklyn
Knapp, Philip.....Breesport
Larsen, Jene W.....Scarsdale
Laury, Roland B.....Elmira
Lautkin, Arthur.....New York
Lawlor, Jeremiah F.....Binghamton
Lazar, Louis A.....Ellenville
Lehman, Howard C.....Snyder
Long, Clymer A.....Freeport, L. I.
Ludwig, Arthur W.....Brooklyn
McCarty, Maclyn.....Flushing
McGinley, Joseph M...Douglaston, L. I.
McGurty, John A.....New York
Mack, Arthur G.....Albany
McVeigh, Gorman J.....New York
Magenheimer, William P.....Springville
Marinucci, Edmond D.....New York
Melomo, Francis P.....Brooklyn
Miller, Edward W.....Gloversville
Miller, George J.....Hicksville, L. I.
Moon, Cary N. Jr.....Gilbertsville
Morgenstern, Leo L.....Bronx
Morrison, William W.....New York
Nicoll, Gordon A.....Bronxville
Pearson, Raymond.....Ithaca
Philip, Arthur J.....Rockville Center
Phillips, Harry S.....Rochester
Phillips, Robert A.....New York
Pinchot, Gifford B.....New York
Pincus, Jerome.....New York
Pinto, John D.....New York
Powers, Harry T.....New York
Root, Charles P. Jr.....Gilbertsville
Rosen, Harold L.....Brooklyn
Rosenbaum, Irving H.....Newburgh
Rossman, Israel M.....Wingdale
Schneider, Edward.....New York
Schwab, William H.....Scotia
Segerson, James E.....Rochester
Semmens, James P.....Ithaca
Siegel, Sigmund A.....New York
Smiley, Dean F.....Ithaca
Stafford, Walter F.....Buffalo
Stowe, Lyman M.....Westbury
Vaughan, Roland G.....Brentwood, L. I.
Watson, Robert F.....New York
Weintraub, David H.....New York
Wendell, John M.....Hamburg
West, Robert.....New Rochelle
Woodruff, James B. Jr.....Rochester
Ziegler, James E. Jr.....New York
Zito, Paul F.....Brooklyn

North Carolina

Bahnson, Edward R.....Winston-Salem
Bahnson, Henry T.....Winston-Salem
Beavers, William O.....Apex
Benbow, Edward P. Jr.....Greensboro
Bradsher, Jacob T.....Milton
Brandon, James R.....High Point
Dixon, Philip L. Jr.....Walstonburg
Forman, Richard C.....Winston-Salem
Fortune, Benjamin F.....Greensboro
Johnson, Gale D.....Roanoke Rapids
Jordan, William S.....Fayetteville
Laurens, John II.....Flat Rock
Liles, George W.....Charlotte
Peters, William A. Jr.....Elizabeth City
Rogers, Max P.....Burlington
Simpson, Paul E.....Durham
Stewart, Albert, Jr.....Fayetteville
Withers, William A.....Raleigh

North Dakota

Hill, Wallace C.....Erie
Kramer, John F.....Fargo
Lewis, Asle K.....Grand Forks
Ostergard, Kay N.....Kenmare

Ohio

Barreiro, Americo L.....Madison
Berry, Thomas P.....Rocky River
Bidder, Thomas G.....East Cleveland
Cleary, James F. Jr.....Cincinnati
Davis, Joseph J.....Middleport
Dwyer, William E. Jr.....Cleveland
Fralick, Charles E.....Springfield
Gerber, David M.....Middleton
Hackleman, Gene L.....Springfield
Hensel, Hubert A.....North Lawrence
Koehler, Henry P.....Findlay
Landy, Ernest.....Cleveland Heights
Leary, William G. Jr.....Cincinnati
LeFever, Harry E.....Columbus
Lehman, Robert C.....Cincinnati
Lowrey, George H.....Cincinnati
McLemore, Robert A.....Alliance
Martin, Wayne B.....Bellefontaine
Mitchell, Dana C. Jr.....Cincinnati
Murphy, Frank V. Jr.....Marion
Nadler, Arthur W.....Cincinnati
Parks, James W.....Akron
Radzow, Karl H.....Cleveland
Reich, Stanley B.....Canton
Renner, Richard G.....Dayton
Sprague, Edward A.....Athens
Stack, Gerald A.....Lorain
Stauffer, Paul R.....Trotwood
Strauch, James H.....Cleveland Heights
Tornello, Robert L.....Youngstown

Pennsylvania

Aldisert, Caesar O.....Carnegie
Barkley, William W. Jr.....Waynesboro
Brisini, Patrick D.....Portage
Brooks, Robert.....Philadelphia
Brown, Andrew J. Jr.....Duquesne
Brown, Walter H. Jr.....Carnegie
Brown, William E.....Philadelphia
Burkle, Joseph S.....Philadelphia
Carnahan, Donald S. Jr.....Pittsburgh
Casey, John D.....Archibald
Ellison, Ervin.....Lancaster
Ermilio, Frank P.....Philadelphia
Fisher, Harry R.....Bala-Cynwyd
Herrold, Warren C.....Port Treverton
Herron, Roland J.....Monessen
Hollstein, Frank E.....Pittsburgh
Hudson, John M.....Philadelphia
Kapp, Robert W.....Tidioute
Leedom, John F., Jr.....Philadelphia
Logue, James G., Jr.....Williamsport
Lorenz, Carl E.....Montgomery
Lowy, Alexander D. Jr.....Pittsburgh
Lyons, James C, Jr.....Linwood
McCloskey, George A.....Beaver
McKnae, Andrew III.....Drexel Hill
Morgan, Russell E.....Bethelehem
Mulberger, Robert D.....Royersford

Pennsylvania—Continued

Nagle, Douglas B. Jr.....Erie
Pringle, Robert W.....Pittsburgh
Rambo, Oscar N. Jr.....Philadelphia
Ranieri, Tito A.....Ardmore
Roach, Robert J.....Erie
Schwartz, Harold.....Philadelphia
Snyder, John F.....Millersville
Starcke, Sewell K.....Pottstown
Steigerwalt, John L.....Pittsburgh
Steimach, Witold P.....Philadelphia
Thompson, Harry G.....Philadelphia
White, Maxwell F.....Philadelphia
Woolhandler, George J.....Pittsburgh
Wozniak, John.....McKeesport

South Carolina

Allison, Richard F.....Columbia
Bryan, Williams M. Jr.....Columbia
Cunningham, Ernest B.....Beaufort
Davis, Thomas M.....Columbia
Estridge, Montgomery N.....Rock Hill
Gazes, Pete C.....Charleston
Harper, Robert D.....Andrews
Pitts, James W.....Columbia
Snelling, John McL. Jr.....No. Augusta
Tiller, Wendell H. Jr.....Spartanburg
Wheeler, James E.....Columbia

South Dakota

Buchanan, Robert A.....Huron
Conley, Robert H.....Watertown
Holland, Lambert W.....Elkton
McGreevy, Edmund J.....Sioux Falls
Margulies, Harold.....Rapid City
Roper, Charles E.....Edgemont
Steele, Granville H.....Aberdeen

Tennessee

Alsobrook, William L.....Nashville
Daugherty, Philip V.....Nashville
Dunn, Thomas M.....Memphis
Flaniken, John C. Jr.....Memphis
Green, Frank D.....Memphis
Hamilton, Harold C.....Rutherford
Hauser, Fred W.....Memphis
Havron, James B.....So. Pittsburgh
Hoppe, Rudolph A.....Chattanooga
Hyatt, Wayne P.....Tazewell
Lane, George F. II.....Memphis
Mitchell, Billy G.....Millington
Shacklett, William W.....Murfreesboro
Speck, Carl T. Jr.....Cleveland
Thomas, Daniel M.....Harrogate

Utah

Callister, Cyril T.....Salt Lake City
Warburton, J. R.....Salt Lake City

Vermont

Kelleher, James H.....Montpelier

Virginia

Adams, Raymond A.....Redoak
Adamson, Nathaniel E.....Portsmouth
Bondurant, Robert F.....Roanoke
Budd, Samuel W. Jr.....Richmond
Farver, Harry E.....McLean
Gobbel, Walter G. Jr.....Suffolk
Jamison, William L.....Manassas
Lee, Parker H. Jr.....Lynchburg
McCausland, Alexander.....Blacksburg
McKee, Kelly T.....Charlottesville
Matthews, Walter S. Jr.....Danville
Palmer, Harold V.....Charlottesville
Payne, Nelson S.....Norfolk
Wortham, Edwin.....Richmond

Wisconsin

Berzito, Patrick M.....Milwaukee
Collentine, George E. Jr.....Milwaukee
Feider, Arnold P.....Belgium
Kent, Leslie T.....Kenosha
Lembert, Glenn E.....Milwaukee
Mortell, Edward J.....Oshkosh
Nelson, Henry E. Jr.....Madison

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION AND PUBLIC HEALTH.)

ALABAMA

Expansion at State Medical College.—Razing the George Eaves Surgical Tuberculosis Clinic the first week in September was the first step in the development of a medical center at the Medical College of Alabama since it became a four year school under the legislation appropriating $1,000,000 for building and $366,750 annually for maintenance and operation. With a view to creating a center of medical activities, the medical college acquired by purchase two blocks and by gift one block of downtown property adjacent to the block on which the Jefferson-Hillman Hospital is located. These three blocks have been allocated to certain other institutions that either are prepared to build as affiliated units or have prospects of doing so. These activities include a University of Alabama Center of

Medical College and University Hospital, Birmingham, Ala.

Adult Education, Jefferson County public health building, a crippled children's clinic and a veterans' hospital. The Crippled Children's Clinic is a nonprofit organization of Alabama citizens who for many years have attempted to offer orthopedic services to the indigent crippled children of the state. They started out limiting their services to Jefferson County, in which Birmingham is located, but as funds were available they extended services to the crippled children of the state. This organization has raised $1,000,000 with which to build a crippled children's hospital in the University of Alabama Medical Center in Birmingham and has already purchased a block of property on which to build. The maintenance and operation of the hospital will remain in the hands of the board of directors of the organization, but the Medical College of Alabama, Birmingham, has been granted professional control and teaching privilege in the institution. The Jefferson County public health building is to be located in the medical center and is to be erected at a cost of a little more than one-half million dollars, which has been allocated by state, county and city governments. The university medical college will enjoy close affiliation with this organization in that the director of the public health program will be chief of the department of public health in the medical college. The University of Alabama Adult Education Center, which handles the university adult education program, will be built in the medical center and the first unit is expected to go into construction late in 1946. Facilities will be provided in the structure for the training of certain auxiliary medical personnel. The veteran's hospital which is to be built in the medical center will cost a little more than $7,000,000. This will be a 500 bed hospital with living quarters for approximately fifty staff members. The land for erection of the hospital has been purchased from the University of Alabama.

CALIFORNIA

Changes in Health Personnel.—Dr. Kenneth W. Haworth, formerly of Pratt, Kan., was appointed health officer for Humboldt County, effective October 1.——Dr. Evelyn F. Buchheim, for the past two years district medical officer for the Fresno area, California Department of Public Health, has resigned.——Dr. Harold T. Castberg has resigned as chief of the Bureau of Adult Health to become director of field investigations for the U. S. Public Health Service, Industrial Hygiene Division, Bethesda, Md. Dr. Lester Breslow is acting chief of the bureau of adult health.

Gimbel Lectures on Sex Psychology.—The Jacob Gimbel Lectures on Sex Psychology were delivered at Stanford University School of Medicine, San Francisco, by Margaret Mead, Ph.D., associate curator of ethnology, American Museum of Natural History, New York. The individual titles of the lectures were:

Biological Determinants, November 4.
Sex Patterns in Bali and New Guinea, November 5.
Cultural Determinants, November 6.
Patterns of Sex Difference in Contemporary United States, November 7.
Sex Differentiation and Creativeness, November 8.

The lectures were established by the late Jacob Gimbel under the joint administration of the University of California and Stanford University medical schools, San Francisco.

ILLINOIS

Positions Available.—Open competitive examinations for nurses with the Illinois Department of Public Welfare will be held December 7 by the Illinois State Civil Service Commission. Applications should be filed by November 16 with the commission, 501 Armory Building. About thirty-nine nurses will be appointed to positions at state hospitals, schools and other welfare institutions. The salary range for nurse I is $1,800 to $2,400. Other examinations on call for the Illinois Department of Public Welfare include physician I, hospital attendant, laboratory technician I, x-ray technician and psychiatric social worker I.

Chicago

Dr. Ivy Honored.—On October 23 Dr. Andrew C. Ivy, vice president in charge of the Chicago Professional Colleges of the University of Illinois, was guest of honor at a banquet given by former students and associates. A feature of the occasion was the proposal by Dr. Anton J. Carlson, a teacher of Dr. Ivy at the University of Chicago, to establish the Andrew C. Ivy Student Loan Fund at Northwestern University, where Dr. Ivy had been a member of the staff for twenty years until his recent appointment at the University of Illinois (THE JOURNAL, July 13, p. 928). Dr. Carlson contributed the first check for the creation of the fund.

Information Center on Alcoholism.—Plans are under way to open an information center on alcoholism in the loop by January 1 under the auspices of the newly organized Chicago Committee on Alcoholism (THE JOURNAL, October 19, p. 399). A survey will be made among hospitals to determine whether scientific treatment can be obtained and the center will serve as a referral agency, according to the Chicago *Daily News*, October 29. Later a broad research program will be undertaken, financed by contributions from private individuals and organizations. Temporary officers of the Chicago committee are Dr. Anton J. Carlson, University of Chicago, chairman; Walter O. Cromwell, Juvenile Protective Association, vice chairman, and Alexander Rotchan, Council of Social Agencies, secretary-treasurer.

LOUISIANA

New Division of Cancer Control.—Dr. James S. May, Oberlin, has been appointed acting head of the newly organized division of cancer control in the Louisiana State Department of Health. The project will be financed by an appropriation from the U. S. Public Health Service of about $50,000. This sum cannot be expended for treatment or establishment of cancer clinics but will be employed to make a survey of the state and to promote an educational campaign against cancer.

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MAINE

Executive Secretary for State Medical Association.—Mr. W. Mayo Payson, house chairman, Legal Affairs Committee in the state legislature, Portland, has been appointed executive secretary of the Maine Medical Association, a new position created by the house of delegates at its annual meeting in Poland Spring in June. The appointment was effective November 1. Mr. Payson has held the position of corporation counsel of the city of Portland for the past ten years. He was Portland representative to the Maine legislature for five consecutive two year terms and is currently house chairman of its important legal affairs committee, a member of the committee on the reference of bills in the existing legislature and chairman of a recess committee studying state pensions. He has also served as house chairman of both the legislative research and the code committee and has been a member of the judiciary and federal relations committees. He had been a practicing attorney in Portland for sixteen years when appointed by the city council in July 1936 to the corporation counsel post.

MARYLAND

Personal.—Dr. Stanley H. Macht, formerly of Crewe, Va., has been appointed associate professor of radiology at the University of Maryland School of Medicine and College of Physicians and Surgeons, Baltimore.

Association of Public Health Laboratories.—The Maryland Association of Medical and Public Health Laboratories met at Goucher College, Baltimore, October 30. Among the speakers were Mr. Paul A. Rohde, associate bacteriologist, state department of health, "Laboratory Diagnosis of Infections Caused by Pyocyaneus and Friedländer's Bacilli," and Dr. Harry Eagle, adjunct professor of bacteriology, Laboratory of Experimental Therapeutics of the U. S. Public Health Service and Johns Hopkins School of Hygiene and Public Health, Baltimore, "The Use of British Antilewisite in the Treatment of Arsenic Poisoning in Animals and in Man."

MASSACHUSETTS

Students to Report Effects of Deficient Oxygen Supply.—Boston University School of Medicine is now using a decompression chamber lent by the Army Air Force for research and experimentation in medical problems at high altitudes. The chamber, formerly used at Westover Field, Chicopee, for the training of flying personnel in the use of oxygen equipment, has been set up on the campus of the university school of medicine, 80 East Concord Street, and is now being used for experiments and demonstrations illustrating the relation of oxygen to the human system and results which occur when the oxygen supply is decreased. Students are able to sight their own reactions to the study by personally experiencing physiologic effects of the deficient oxygen supply. Under the arrangement the school of medicine is under contract to report results of the experiments to the Army Air Force and to aid in teaching a section of aviation medicine, now included in the physiology section course.

MICHIGAN

Dearholt Medal Awarded.—Theodore J. Werle, executive secretary of the Michigan Tuberculosis Association, was presented with the annual Dearholt Medal at the annual banquet of the Mississippi Valley Conference on Tuberculosis in Chicago September 26. The medal is given each year for exceptionally meritorious work in the field of tuberculosis control. Mr. Werle has been executive secretary of the Michigan Tuberculosis Association for twenty-five years.

Personal.—Dr. Christopher G. Parnall, Rochester, N. Y., director of the hospital of the University of Michigan, Ann Arbor, from 1918 to 1924, has opened a hospital consultant's office in Ann Arbor.——Dr. Abraham Leenhouts, Holland, who has completed fifty years in the practice of medicine, has been appointed campus physician of Hope College.——Maurice L. Moore, Ph.D., assistant director of research, Frederick Stearns and Company Division, Sterling Drug Company, Detroit, has been elected chairman of the division of medicinal chemistry of the American Chemical Society for 1947.——Dr. Pearl E. Hackman, formerly of Reading, Pa., has been appointed school physician for Lansing.

Fellowship in Anatomy.—Dr. John D. Green, a member of the faculty of the University of Cambridge, England, is in Detroit as a recipient of the Alexander Blain Hospital Fellowship in anatomy for 1946-1947. Research in fields of neurology and neural anatomy will be directed by Dr. Green at Wayne University College of Medicine, Detroit, for one year under the terms of the fellowship. Selection of the recipient was made by a faculty committee following acceptance of the $5,000 fellowship grant from the hospital by the Detroit Board of Education. Dr. Green, who has been on the Cambridge faculty since 1943, was trained at St. John's College and the Radcliffe Infirmary at Oxford, where he was awarded the hospital prize in obstetrics. He held various clinical appointments at the Royal Infirmary, Sheffield, and was a recipient of the Hallett Prize of the Royal College of Surgeons for research in anatomy.

MINNESOTA

Meeting of Radiologists.—The Minnesota Radiological Society held a meeting in Rochester, October 26. Among the speakers were:

Dr. Samuel F. Haines, Rochester, Radioactive Iodine in the Treatment of Exophthalmic Goiter.
Dr. John J. Wells, Rochester, Unusual Case of Giant Cell Tumor of Bone Treated with X-Rays.
Dr. Robert E. Fricke, Rochester, Role of Alpha and Beta Particles in Radium Therapy.
Dr. John D. Camp, Rochester, Amebiasis in Naval Personnel.
Dr. Harry M. Weber, Rochester, A Case of Diffuse Lymphomatous Involvement of the Colon.
Dr. Howard B. Burchell, Rochester, The Clinical Syndrome Associated with Pulmonary Arteriovenous Fistula: Report of a Case.
Drs. Burchell and Oscar T. Clagett, Rochester, A Case of Pulmonary Arteriovenous Fistula (motion picture).
Dr. Byrl R. Kirklin, Rochester, The Diagnosis of Carcinoma of the Stomach by Chest Radiography.
Dr. John R. Hodgson, Rochester, Lesions of the Small Bones of the Feet: Neurotropic or Infectious?

NEBRASKA

Licenses Revoked.—The state of Nebraska recently revoked the medical licenses of Drs. James C. Anderson and Philip T. Campbell, Omaha, charged with second degree murder in the death of Marian Blyth. Copies of the revocation orders issued by Dr. Wallace S. Petty, Lincoln, director of the Nebraska Department of Health, were received by Assistant County Attorney Philip Kneifl. The orders state that from April 23 to April 26 Drs. Anderson and Campbell "engaged in immoral, unprofessional and dishonest conduct, knowingly and wilfully failed to notify the proper authorities of the death of Marian Blyth; knowingly and wilfully failed to sign a death certificate; knowingly and wilfully unlawfully disposed of the body by depositing it in the Missouri River."

NEW JERSEY

Kenneth Thompson Joins Roche-Organon.—Dr. Kenneth W. Thompson, clinical professor of surgery, Tufts College Medical School, Boston, has been appointed medical director of Roche-Organon, Inc., Nutley. Dr. Thompson was formerly managing editor of the *Journal of Clinical Endocrinology*.

NEW YORK

New Director of Cancer Research.—Joseph G. Hoffman, Ph.D., physicist, has been named director of cancer research at the Rockwell Park Memorial Institute, Buffalo.

Study of Twins.—Newspapers reported that a statewide study of twins aged 60 years and older is being carried out under the direction of Dr. Frederick MacCurdy, New York City, state commissioner of mental hygiene. The study has been undertaken by the state department of mental hygiene in its research into physiologic and psychiatric processes of aging. Information given by voluntary participants will be kept confidential.

Edward Rogers Goes to California.—Dr. Edward S. Rogers, Albany, has resigned as assistant commissioner for medical administration to become professor of public health and medical administration and dean of the recently established school of public health at the University of California, Berkeley. According to the New York *Times*, Dr. Rogers will commence his resident duties as dean with the opening of the next semester in January. During the intervening weeks he will conclude his state duties, study public health and medical care programs in the United States and Canada, and visit a number of schools of public health.

Ralph Horton Named to New Position.—Dr. Ralph Horton, Oneonta, has been appointed general director of the tuberculosis hospitals in the New York State Department of Health, it was announced October 11. Dr. Horton, now director of the Homer Folks State Tuberculosis Hospital at Oneonta, will be responsible for inspection and supervision of all county and city hospitals which will take part in the statewide program to eliminate tuberculosis in the state within twenty years. Residents of the state suffering from the disease may now enter, free of charge, county and city hospitals

authorized by the state health department to receive such patients. The new state program provides for state aid to local tuberculosis hospitals to the extent of about 50 per cent of the operating costs and will increase the state's annual health expenditures by $7,000,000.

New York City

Harvey Lecture.—Dr. Arnold R. Rich, professor of pathology, Johns Hopkins University School of Medicine, Baltimore, will deliver the second Harvey Society Lecture of the current series at the New York Academy of Medicine, November 21, on "Hypersensitivity in Disease."

New Professor of Radiology.—Dr. Harold L. Temple, assistant professor in charge of teaching radiology, Cornell University Medical College, has been appointed professor of radiology. Dr. Temple, who graduated at the University of Nebraska College of Medicine, Omaha, in 1935, has been a member of the staff of Cornell since 1941.

Tumor Clinic at Harlem Hospital.—The Tumor and Cancer Prevention Clinics at Harlem Hospital were formally opened with appropriate exercises October 24. Speakers included Dr. Louis T. Wright, director of surgery, Harlem Hospital, New York City, and Dr. Edward M. Bernecker, New York City commissioner of hospitals.

Grant for Research.—The department of pharmacology of Cornell University Medical College has accepted a research grant from the Cinchona Products Institute of New York for a study of the effects of cinchona alkaloids on heart arrhythmias. The work is to be carried on under the direction of Dr. Harry Gold, using various alkaloids of high purity, especially manufactured for this study by N. V. Nederlansche Kininefabriek, Maarssen, the Netherlands.

First Fellowship Awarded by Eye Bank.—Dr. Walter Kornbleuth, ophthalmologist of the Hebrew University in Palestine, has been announced as the recipient of the first international fellowship to be granted by the Eye Bank for Sight Restoration, New York 21. The fellowship is for postgraduate training in ophthalmology and research problems relating to the cornea under the direction and supervision of a member of the staff of the Wilmer Institute at the Johns Hopkins University School of Medicine, Baltimore.

NORTH CAROLINA

Changes in Health Personnel.—Dr. Everett H. Ellinwood, Raleigh, has been named health officer for the Catawba-Lincoln District Health Department, effective July 1, succeeding Dr. Harold C. Whims, Newton, who holds a similar position in Buncombe County.

Medical Symposium.—The Duke University School of Medicine, Durham, and Duke Hospital combined in sponsoring their ninth annual medical symposium in Durham, October 4-5. Among the speakers were:

Dr. Eugene A. Stead Jr., Atlanta, Ga., Recent Advances in the Study of the Circulation and Their Application to Clinical Problems.
Dr. Alfred Blalock, Baltimore, Surgery of the Heart and Great Vessels.
Dr. Louis K. Diamond, Boston, The Clinical Importance of the Rh Factor, Especially in Obstetrics.
Dr. Francis J. Braceland, Rochester, Minn., Some Lessons Learned from World War II.
Dr. Ralph M. Tovell, Hartford, Conn., Lessons in Anesthesiology Learned in the European Theater of Operations.
Dr. Idys Mims Gage, New Orleans, Thrombophlebitis and Phlebothrombosis.
Dr. Sumner L. S. Koch, Chicago, The Modern Treatment of Burns.
Dr. Augustus Thorndike Jr., Boston, Problems of Convalescence and Rehabilitation in General Practice.
Dr. Francis R. Dieuaide, New York, The Application to Civilian Practice of New Knowledge of Tropical Diseases.
Dr. Chester S. Keefer, Boston, Streptomycin.
Dr. Theodore J. Abernethy, Washington, D. C., Differential Diagnosis of Primary Atypical Pneumonia.
Dr. John F. Mahoney, Staten Island, N. Y., The Modern Treatment of Syphilis and Gonorrhea.
Dr. Chester M. Jones, Boston, The Therapy of Acute and Chronic Hepatitis.

OHIO

University News.—Dr. Harold C. Haynie, recently released from military service, has been appointed assistant medical director of the Ohio State University Hospital and its outpatient department and as assistant professor of medicine and hospital administration in the medical school.

Study on Metabolism of Bacteria.—A grant of $17,200 from the U. S. Navy to the department of biochemistry of Western Reserve University School of Medicine, Cleveland, for the study of the metabolism of bacteria was announced October 24. The grant will support the first year's work in a three year program to be conducted by Harland G. Wood, Ph.D., head of the department, and Lester O. Krampitz, Ph.D., and Merton F. Utter, Ph.D., associate professors of biochemistry, using bacteria as experimental organisms to throw more light on living processes in human beings. The research also will be directed toward a clearer understanding of the action of antibiotics such as penicillin, antiseptics and other chemicals on bacteria, with a view toward increasing their effectiveness. The department of biochemistry recently received a grant of $13,800 from the American Cancer Society for a research project using "tracer elements" in the study of fundamental processes of life.

PENNSYLVANIA

Philadelphia

Lectures on Mental Hygiene.—The third series of lectures on mental hygiene, arranged by the committee on nervous diseases and mental hygiene of the Philadelphia County Medical Society, opened at the society's headquarters, November 4, to continue through December 16. Among the participants:

Dr. LeRoy M. A. Maeder, November 4, Adult Maladjustment Traceable to Childhood Experiences.
Dr. Paul Sloane, November 11, Mother and Baby.
Dr. Frederick H. Allen, November 18, The Baby Becomes a Person.
Dr. Robert S. Bookhammer, November 25, Family Relationships.
Dr. Gerald H. J. Pearson, December 2, The Child Meets Reality.
Mr. E. Gillet Ketchum, December 9, The Psychologic Aspect of School Disabilities.
Dr. Margaret DeRonde, December 9, The Psychiatric Aspect of School Disabilities.
Dr. Oliver S. English, December 16, Adolescence.

TENNESSEE

Physician Aids Library.—Dr. Phocian W. Malone, Big Springs, Texas, has set up a library trust for Watertown High School, Lebanon, of $500 annually for a period of ten years to supply current library needs. Dr. Malone graduated at the Watertown High School and is now senior surgeon at the Malone-Hogan Clinic and Hospital at Big Springs, Texas.

Pathologists Organize.—The Memphis Society of Pathologists was organized October 11 with Dr. Douglas H. Sprunt, professor of pathology at the University of Tennessee College of Medicine, Memphis, as temporary chairman. Charter members of the society include:

Dr. Thomas C. Moss, Memphis, director of laboratories, St. Joseph's Hospital.
Dr. Nolan E. Leake, Memphis, pathologist, Baptist Memorial Hospital.
Dr. Isadore N. Dubin, assistant professor of pathology, University of Tennessee College of Medicine, Memphis.
Dr. Alfred Golden, Memphis, director of laboratories, Baptist Memorial Hospital.
Dr. Israel D. Michelson, professor of bacteriology, University of Tennessee College of Medicine, Memphis.
Dr. Aubrey C. Gose, pathologist, Oakville Sanatorium, Oakville.
Dr. Edwin D. Murphy, instructor in pathology, University of Tennessee College of Medicine, Memphis.
Dr. Henry D. Chipps, pathologist, Methodist Hospital, Memphis.
Dr. Randolph T. Shields, assistant professor of pathology, University of Tennessee College of Medicine, Memphis.

WASHINGTON

State Organization for Spastic Children.—The Washington Spastic Children's Society, organized May 25 on a statewide basis, is active in presenting a bill to the legislature which meets next January to assist in effecting its objectives. The society plans to establish hospital or boarding schools, tentatively set at one in Seattle and one in Spokane and to have day schools in some twelve to fifteen cities throughout the state. What is described as a new feature is the establishment of an industrial school for the group by spastic children with somewhat lower mentality, the type which cannot get along well in any type of school and has sufficient mentality to carry out certain activities. Officers of the group include Merrill W. Boyack, Seattle, president; M. L. Graybill, Spokane, vice president; Phyllis M. Corrison, secretary; Helmer Kastner, treasurer, and Dr. Hulett J. Wyckoff, Seattle, medical adviser.

WEST VIRGINIA

Personal.—Dr. Olan T. Coffield, Morgantown, has joined the staff of the University Health Service at West Virginia University, of which Dr. John J. Lawless is director. Dr. Coffield received his A.B. degree in 1940 and his B.S. in 1942 at West Virginia University, graduating at the University of Louisville School of Medicine in 1943. After serving his internship at Wheeling General Hospital, he was commissioned in 1944 in the Army Medical Corps, serving until his release in 1946.

New Chief of Medical Services.—Dr. Harold H. Kuhn, Charleston, has been named chief of the division of medical services of the department of public assistance by Mr. Robert F. Roth, director. He will serve on a part time basis, effective November 1. There has been a vacancy in the position of chief

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of the division of medical services since Dr. Paul R. Gerhardt, Van, resigned in 1945 to accept appointment as director of the division of cancer control. Mrs. Mae W. Stratton, who has been acting chief of the division for several months, will serve as administrative assistant to the new director.

GENERAL

Cancer Service.—Dr. James R. Miller, Hartford, president-elect of the Connecticut State Medical Society, has accepted the chairmanship of the Service Committee of the American Cancer Committee. Other members are Dr. Robert R. Newell, Stanford, Calif.; Dr. Leonard W. Larson, Bismarck, N. D.; Dr. William W. Haggart, Denver; Dr. Alton Ochsner, New Orleans; Dr. Augusta Webster, Chicago; Dr. Bowman C. Crowell, Chicago; Dr. Alphonse R. Dochez, New York; Dr. Edward W. Chamberlain, Philadelphia; Dr. Thomas A. McGoldrick, Brooklyn; Dr. Louis H. Bauer, New York, and Dr. Edward J. McCormick, Toledo, Ohio.

Harry M. Weaver Named Director of Research.—Harry M. Weaver, Ph.D., acting director of research for the National Foundation for Infantile Paralysis, New York, has been named director of research. Previously on the faculty of Wayne University College of Medicine, Detroit, Dr. Weaver joined the National Foundation staff last February as assistant to the medical director. Dr. Weaver will be responsible for the research program of the national foundation, through which grants are made to established research organizations such as universities, public health laboratories and hospitals to enable scientific investigators throughout the country to carry on programs of research designed to find ways to prevent or cure poliomyelitis. Until the end of May this year the national foundation had authorized March of Dimes funds expenditures of $17,329,189.01 for research, education and epidemic aid in poliomyelitis. Of this amount $5,745,977.88 was authorized for support of research.

Cancer Conference.—The National Advisory Cancer Council will sponsor a conference on gastric cancer at Billings Memorial Hospital, University of Chicago, December 5-6. The conference was arranged by the Gastric Cancer Committee of the council and is the third of its kind. The first was held in 1940 in the National Cancer Institute of the National Institute of Health. The council is placing particular stress on cancer of the gastrointestinal tract, which accounts for 45 per cent of the total cancer deaths in this country. Included among the speakers will be:

Leonell C. Strong, Ph.D., New Haven, Further Observations on the Genetic Nature of Gastric Cancer in Mice.
Dr. Shields Warren and Dr. Elsie M. McPeak, Boston, Studies on the Pathology of Gastric Carcinoma in Mice.
Clarence C. Lushbaugh, Ph.D., Chicago, Experimental Hypertrophic Gastritis and Gastric Polyposis in Monkeys.
Dr. Edward B. Benedict, Boston, Observations on the Gastric Mucosa in Pernicious Anemia After Liver Therapy.
Drs. Leo G. Rigler, Minneapolis, and Henry S. Kaplan, New Haven, Pernicious Anemia and Carcinoma of the Stomach.
Dr. Cornelius P. Rhoads, New York, Highlights of Metabolism Studies in Gastric Cancer.
Dr. George T. Pack, New York, The Extension of Radical Surgery in the Treatment of Gastric Cancer.
Dr. Andrew C. Ivy, Chicago, Effect of Methylcholanthrene Orally in the Rabbit.
Dr. Leon Schiff, Cincinnati, Gastric Secretion of Radioactive Iodide in Both Health and Gastric Disease.
Dr. Alexander Brunschwig, Chicago, Concentration of Quinine in Gastrointestinal Cancers.
Drs. George N. Papanicolaou and William A. Cooper, New York, The Cytology of the Gastric Fluid in the Diagnosis of Carcinoma of the Stomach.
Dr. Franklin Hollander, New York, Experimental Exhaustion of the Gastric Mucous Barrier in Dogs and a New Technic for Studying the Cytology of Gastric Aspirates in Man.
Dr. Manfred W. Comfort, Rochester, Minn., Gastric Acidity Before and After the Development of Carcinoma of the Stomach.
Dr. Morris E. Dailey, Los Angeles, The Role of Cancer Prevention Clinics in the Detection of Early Gastric Cancer.
Drs. David State and Owen H. Wangensteen, Minneapolis, Studies of Precursor Groups of Gastric Cancer.
Dr. Frederic E. Templeton, Seattle, X-Ray Diagnosis of Early Gastric Lesions.
Dr. Marie Ortmayer, Chicago, Biologic Characteristics of Asymptomatic, Nonpalpable Tumors of the Rectum and Comparison with the Stomach.

Participating in the general discussion will be Drs. P. R. Peacock, Glasgow Royal Cancer Hospital, and Walter L. Palmer, University of Chicago.

Istanbul Hospital Seeks Surgeon.—The American Hospital of Istanbul, now renamed the Admiral Bristol Hospital, is looking for a young American surgeon skilled in surgery of the chest. The Ministry of Public Health of the Turkish republic has agreed to give the American physician appointed a five year contract, renewable at the end of five years, to serve as a government expert, his specific task being to organize and supervise the chest surgery service in the Haydar Pasha contagious diseases hospital in Istanbul, where there are 80 beds for pulmonary tuberculosis. He is to give two or three mornings a week to this work, for which he will receive from the Turkish government a nominal salary of Ltqs. 100 a month; the remainder of his time will be devoted to the Admiral Bristol Hospital. In case a suitable candidate is found, the hospital is prepared to engage him on a full time basis. The exact amount of salary is impossible to fix at the present time owing to abnormal living costs in Istanbul. However, the salary paid would be adequate to cover his traveling expenses, his living costs on a comfortable basis in this city and insurance or annuity payments in the states sufficient to guarantee him adequate retirement income. The correspondence incident to this position was sent to THE JOURNAL by the Department of State, Washington, D. C. Dr. Lorrin A. Shepard has been American director of the Admiral Bristol Hospital since 1927.

Proposed Changes for Red Cross.—Fundamental changes in the organization structure of the American Red Cross were adopted by the present governing body, the Central Committee, at its September meeting in Washington. The changes were recommended by a nationally representative advisory committee appointed last March by Basil O'Connor, national chairman, to study the organization of the Red Cross in the light of the tremendous growth in its membership and services to the people since 1905, when its present congressional charter was granted. Announcing the action at the recent meeting after transmitting the recommendations to the chapters, Mr. O'Connor said they are of greatest significance to the Red Cross organization at all levels. The recommended revisions to the charter of the organization, unchanged since 1905, provide at the national level for greatly increased representation from the chapters and from the public at large on the national governing body and provide at the chapter level for participation by the membership in all chapter operations. Most significant changes include:

Expansion of the present governing board from eighteen members to fifty members, thirty of whom would be drawn from local chapters under a system of nomination and election and twelve of whom would be elected to represent the national interests at large.
A system of regular rotation in office of the governing bodies in chapters as well as in the national organization.
Discontinuance of the Board of Incorporators provided for in the 1905 charter.
A provision enabling any twenty-five members to appeal to the national organization basic grievances as to matters of chapter procedures.
A provision allowing the establishment of committees chosen by the chapters within each state for the purpose of liaison with state relief, health and welfare agencies.
A new system of auditing separately all accounts of local chapters as well as of the national organization.
Elimination of present classification of memberships according to sums contributed.

At present the Central Committee or governing board of the Red Cross consists of eighteen persons. Six are chosen by chapter delegates, six appointed by the President of the United States and six named by the Board of Incorporators, a body of sixty-five persons initially named in 1905 for the purpose of bringing the corporate organization into being. The incorporators have elected their own successors since that time. The President of the United States appoints the national chairman as well as five other members to the Central Committee from the Departments of State, War, Navy, Treasury and Justice. Under the proposed changes, the Central Committee would be increased to fifty members and its name changed to the Board of Governors. Of the fifty members, thirty would be elected by delegates of the chapters at the national convention held each year, twelve would be elected by the Board of Governors itself as members-at-large, and eight would be selected by the President of the United States, of whom one would be designated by him as president of the Red Cross. Among those selected by the President of the United States from government departments and agencies, at least one and not more than three would be chosen from the armed forces. The election of the governors by the chapters at the national conventions would be under procedure insuring geographic distribution as well as representation of chapters of all sizes.

CORRECTION

Typhoid Deaths.—In the list of deaths from typhoid published in THE JOURNAL July 6 the statement was made that Omaha, although in the first rank, had a typhoid death rate of 0.4 per hundred thousand of population. Information has now been received indicating that the report from Omaha was in error and that there were no deaths from typhoid in Omaha during the year covered by the tabulation.

Deaths

Alfred Iverson Folsom ✠ Dallas; Southwestern University Medical College, Dallas, in 1908; born in McGregor, Texas, May 9, 1883; carried on postgraduate work at the Mayo Clinic, Rochester, Minn.; joined the staff of Baylor University College of Medicine, Dallas, in 1921, serving as professor from 1923 to 1943, when he accepted a similar position at the then new Southwestern Medical College; vice chairman of the medical board of Baylor University Hospital, created in 1946 to supervise teaching program; chief of the department of urology, Parkland Hospital, Dallas, since 1923; honorary professor of urology, University of Guadalajara, Guadakjara, Jalisco, Mexico; fellow of the American College of Surgeons and a specialist certified by the American Board of Urology; member of the Texas Surgical Society and the South Central Urological Association, having been president of both, the Dallas County Medical Association, the Texas State Medical Association and the Dallas Southern Clinical Society; chairman of the Section on Urology, American Medical Association, in 1931 and member of its House of Delegates in 1933; president of the American Urological Association at the time of his death, October 3, aged 63, which resulted from an automobile collision.

Daniel Cleveland Patterson ✠ Bridgeport, Conn.; College of Physicians and Surgeons, Baltimore, 1906; born in New Brunswick, Canada, Oct. 1, 1882; member and past president of the state board of medical examiners, Connecticut State Medical Society and the New England Surgical Society; member of the American Association for the Surgery of Trauma; fellow of the American College of Surgeons; member of the founders group of the American Board of Surgery; an officer in the medical corps of the U. S. Army, serving overseas during World War I; on the staff of the Bridgeport Hospital; died September 12, aged 63, of massive subarachnoid hemorrhage and coronary arteriosclerosis.

Thomas Almy ✠ Fall River, Mass.; Harvard Medical School, Boston, 1909; specialist certified by the American Board of Obstetrics and Gynecology, Inc.; member of the New England Obstetrical and Gynecological Society, of which he had been vice president and president, and the New England Pediatric Society; served on the staffs of the Union and Fall River General hospitals; died September 6, aged 63, of arteriosclerosis.

Charles Marion Anderson, Huntington, W. Va.; University of Louisville (Ky.) Medical Department, 1894; died September 4, aged 80, of senility and uremia.

Sanford Milton Blunk ✠ Virden, Ill.; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1911; served as member and president of the Virden Community High School Board; died in St. John's Hospital, Springfield, September 8, aged 68, of metastatic carcinoma following chronic exposure to x-ray radiation to hand.

Albert Charles Carter, Pensacola, Fla.; Vanderbilt University School of Medicine, Nashville, 1910; member of the American Medical Association; on the staff of Pensacola Hospital; died September 1, aged 59, of coronary thrombosis.

Cline M. Chipman ✠ Washington, D. C.; George Washington University School of Medicine, Washington, 1907; associate in anesthesia at his alma mater; member of the American Society of Anesthetists; on the staffs of the George Washington University, Emergency and Gallinger hospitals; found dead September 7, aged 62.

Frank S. Davidson, Chicago; Rush Medical College, Chicago, 1897; member of the American Medical Association; formerly on the staffs of the Ravenswood and Alexian Brothers' hospitals; died September 27, aged 71, of cardiovascular renal disease.

Homer Willard Davis, Alton, Ill.; Washington University School of Medicine, St. Louis, 1900; member of the American Medical Association; fellow of the American College of Surgeons; chief of surgery at the Alton Memorial Hospital and surgical consultant to St. Joseph's Hospital; died September 5, aged 72, of carcinoma of the liver.

James William Davis, Ozark, Ark. (licensed in Arkansas in 1903); died September 12, aged 78, of strangulation of a loop of bowel by Meckel's diverticulum.

William Eugene Delaney Jr., ✠ Williamsport, Pa.; Jefferson Medical College of Philadelphia, 1923; fellow of the American College of Surgeons; on the staff of the Williamsport Hospital, where he died September 11, aged 52, of cirrhosis of the liver and duodenal ulcers.

Frank Gerald Douglass ✠ Chicago; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1910; on the staffs of the Englewood and St. George hospitals; died September 11, aged 60, of chronic myocarditis.

George Lefferts Fox ✠ Hartford, Conn.; McGill University Faculty of Medicine, Montreal, Que., Canada, 1924; formerly director of health education at Hartford Public High School; served on the faculty of the University of Connecticut in Storrs; at one time affiliated with the Lamont Infirmary, Exeter Academy, Exeter, N. H.; member of the New Hampshire Medical Society; died in the Hartford Hospital September 1, aged 59, of coronary thrombosis.

Frederic Michael Groner, Yorkville, Ill.; Loyola University School of Medicine, Chicago, 1921; for many years county coroner; on the staff of St. Joseph Mercy Hospital in Aurora; died September 9, aged 63, of chronic endocarditis.

John Alexander Hembree, Pearson, Ga.; Georgia College of Eclectic Medicine and Surgery, Atlanta, 1905; member of the American Medical Association; formerly an officer in the Civilian Conservation Corps; at one time served as a captain in the medical reserve corps of the U. S. Army, stationed at Camp Shelby, Miss.; major in the medical reserve corps of the U. S. Army, not on active duty; died September 15, aged 67, of heart disease.

Mordecai Laughlin Howard, Danville, Ill.; Pulte Medical College, Homeopathic, Cincinnati, 1891; member of the American Medical Association; on the staff of the Lake View Hospital, where he died September 16, aged 79, of carcinomatosis.

Irvin F. Hummon ✠ Oak Park, Ill.; Chicago College of Medicine and Surgery, 1917; died September 26, aged 72, of coronary occlusion and arteriosclerosis.

Lee F. Hunt ✠ Anderson, Ind.; Kentucky University Medical Department, Louisville, 1903; formerly secretary of the Madison County Medical Society; an officer in the medical corps of the U. S. Army, serving overseas during World War I; affiliated with the St. John's Hickey Memorial Hospital, serving at one time as president of the staff; died September 9, aged 69, of massive retroperitoneal hemorrhage and dissecting abdominal aneurysm.

Joseph Bolton Knipe, Sparkill, N. Y.; Columbia University College of Physicians and Surgeons, New York, 1903; served during World War I; died September 4, aged 75, of heart disease.

John Liebau ✠ Chicago; Bennett Medical College, Chicago, 1914; died September 24, aged 76, of coronary thrombosis.

Hermann Robert Markt, Wingdale, N. Y.; Schlesische-Friedrich-Wilhelms-Universität Medizinische Fakultät, Breslau, Prussia, Germany, 1923; affiliated with the Harlem Valley State Hospital; died July 4, aged 45, of coronary thrombosis.

Eugene Augustus Meacham ✠ South Amboy, N. J.; New York University Medical College, New York, 1898; medical examiner for the Middlesex County Draft Board during World War I; affiliated with Roosevelt Hospital in Metuchen and the South Amboy Memorial Hospital; died September 24, aged 73, of endocarditis.

John Ray Newcomb ✠ Indianapolis; Medical College of Indiana, Indianapolis, 1904; served during World War I; chairman of the Marion County Procurement and Assignment Service during World War II; colonel, medical reserve corps, U. S. Army, not on active duty; died in the Methodist Hospital September 3, aged 66, of myocardial failure.

Adolph Benedict Schneider ✠ Cleveland; Cleveland Medical College, 1894; on the staff of the Huron Road Hospital in East Cleveland; at one time professor of medicine and physical diagnosis at the Cleveland Homeopathic Medical College; died in the Memorial Hospital, North Conway, N. H., September 3, aged 79, of injuries received in an automobile accident.

Barney Dunbar Sibley, Birmingham, Ala.; Birmingham Medical College, 1898; member of the American Medical Association; formerly health officer of Warrior; died in St. Vincent's Hospital September 5, aged 75, of cerebral hemorrhage and cardiovascular renal disease.

Ernest Carlton Wood, Bloomfield, Ky.; Kentucky University Medical Department, Louisville, 1906; member of the American Medical Association; died August 15, aged 68, of cerebral hemorrhage.

Irving Zahler, St. Petersburg, Fla.; Long Island College Hospital, Brooklyn, 1918; died August 15, aged 51, of pulmonary edema.

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Foreign Letters

PARIS

(From Our Regular Correspondent)

Oct. 26, 1946.

Test of the Sensitivity of Bacteria to Penicillin and Sulfonamides

At a recent meeting of the Academy of Medicine Lecocq and Chauchard (noted for his studies on chronaxia) and Mrs. H. Mazoue presented a new method for determining the penicillin and sulfonamide sensitivity of bacteria. The authors made studies on the white rat, by oral or parenteral routes, the penicillin and the "para-aminophenyl sulfonamide" : 1.162 F. They found an increase of the nervous chronaxia and a diminution of the muscular chronaxia. The consecutive ingestion of two drops of a suspension of bacteria (corresponding to 500 million organisms) treated with formaldehyde and heated at 149 F. produced the following effects: The resisting bacterium inhibits the disturbances and brings the chronaxia back almost to normal, the sensitive bacteria leave it as altered by penicillin and sulfonamides. The authors think that the exotoxins or endotoxins with which the resisting bacteria are endowed hinder in vivo the action of penicillin and sulfonamides on the neuromuscular system. This test shows the sensitivity or the resistance of bacteria to penicillin and sulfonamides by a series of chronaximetric readings made within the twenty minutes following the ingestion or the injection of these products made after a previous ingestion of bacteria treated with formaldehyde and heated.

Congress of French Speaking Electroradiologists

The Congress of French Speaking Electroradiologists took place in Paris from the 9th to the 12th of October. Among others, important Swiss, Dutch and Belgian delegations were present. Baudouin and Fischgold read papers on the development and prospects of clinical electroencephalography. Lachapelle of Bordeaux reported on chronic vertebral rheumatism. Lamarque and Gros of Montpellier reported experiments on contact radiotherapy in rectal cancers. In case of nonstenotic cancer the authors use tubes of the Philip type, the direction of the beam being in the axis of the tubes. The three weeks course comprises two weekly treatments, each consisting of 2,500 roentgens. In 50 cases (31 not extirpable and 19 inoperable, mostly on account of the general condition) there have been 6 deaths, 12 apparent recoveries (4 of which date back from thirteen to seventeen months) and 12 improvements; in 16 patients the course of treatment is not yet finished. The authors have seen 4 cases of cylindric epithelioma regressing rapidly and completely; in a few months the surface of the mucosa becomes normal again. The authors emphasize that it is too soon to appreciate the absolute efficacy of this treatment, but Chaoul's statistics (Germany) covering a much longer period confirm this success. These statistics, published in 1943, show 62 recoveries among 104 cases treated from two to eight years previously.

Cottenot and Bourdon reported results obtained from December 1942 to January 1945 at the St. Louis Hospital by contact radiotherapy on 473 patients showing 761 dermatologic disorders. In 113 cases of epithelioma of the face they had 90 per cent recoveries together with 70 per cent of esthetic cicatrization and this after a lapse of one to three years. The most interesting results were obtained on cancers of the commissure of the lips, of the eyelids, of the nose and of the pinna. Sixteen patients were nonsterilizable. In 21 cases of angioma of children under 2 years there were 15 very good results, 2 good and 3 moderately good. Of 15 keloid cicatrices there were 11 very good and 4 good results. The treatment of 500 warts, especially plantar warts, has given quick results. It is the rapidity of the treatment of benign cutaneous disorders that the author emphasizes.

Inauguration of the Royal Institute of Cardiology

The inauguration of the Institute of Cardiology took place on June 15-16 under the presidency of Professor Gallavardin in the presence of its founder, Professor Laubry, a member of the institute, and of Professors Donzelot, Lian, Hermann and Giraud and of numerous representatives of the medical profession of France, Belgium, Canada, Greece, Lebanon and Mexico. The creation of this center of research was considered by Professor Laubry in 1938 but was delayed by the war and the Nazi occupation; thanks to the activity of its promoters, it has been realized after the liberation. Laboratories of physiology provided with the newest apparatus and a modern hospital are at the disposal of Professor Jourdan, scientific director of the institute.

New Dean of Paris Faculty of Medicine

Professor Baudouin having retired, the Paris Faculty of Medicine has elected as dean for five years Professor Leon Binet. He has been titular chairman of the department of physiology of the Paris Faculty of Medicine since 1930 and a member of the Academy of Medicine since 1939. He had also been a member of the institute since 1942.

NETHERLANDS

(From Our Regular Correspondent)

AMSTERDAM, Oct. 26, 1946.

Camp Vertigo

In an article published in the *Nederlandsch tijdschrift voor geneeskunde* **90**:1000, 1946 Dr. J. Kuilman has reported his experience with 412 cases diagnosed in war prisoners in Batavia during 1944 and 1945. The patients complained of vertigo of one to fifteen minutes' duration from once or twice a week to several times a day. The recumbent position did not prevent it, but sudden movements or turning the head to one side resulted in heavier types of attack accompanied with nausea and vomiting. Headache and uncertainty of gait was experienced in the intervals. On turning the eyes laterally one noticed nystagmus, which persisted as long as one kept looking to that side. During nystagmus there were attacks of vertigo and nausea. There was a tendency to fall to the side to which the eyes were turned. Labyrinthine and lateral nystagmus interfered with each other in the sense of homolateral synergism or contralateral antagonism. Patients sitting inside a vertically black and white striped rotating cylinder exhibited the phenomenon of optic nystagmus, which in its turn interfered with the lateral nystagmus much as the labyrinthine nystagmus did. Vertigo, nausea and falling to one side were frequent in this experiment in patients with camp vertigo. Of the patients with these complaints, 37 were "camp deaf". They were deaf for low tones, whereas distant deafness was less. The deafness was not vestibular. Many of these patients with camp vertigo have suffered from intestinal trouble and malnutrition and they had burning feet, camp eyes, pellagra, beriberi and digestive disorders. These additional conditions confirmed the impression of a deficiency disease resulting in a disorder of the supranuclear mechanisms that are concerned with the coordination of eye movements and equilibrium. There was no indication of peripheral vestibular damage. It is suggested that deficiency of B_2 vitamins would underlie the condition of mainly neurologic character. Yeast gave benefit as long as it was available.

Nicotinic acid amide gave some improvement. (It came from a supply of the American Red Cross in 1945.) Yeast treatment was found most efficient of all, and it had to be continued for months before all the symptoms disappeared.

Prostatism Coincident with Periurethral Adenoma

In a dissertation presented to Leiden University Dr. J. Glazenburg stated that treating male mice with estrogens results in a considerable increase in the weight of the bladder and in hypertrophy of the two smooth muscle sphincters and of the external striated sphincter. Metaplastic changes in the coagulating gland are reminiscent of those found in the human periurethral glands, but owing to the difference in topography a mechanical obstruction to micturition cannot be inferred from this condition. Testosterone counteracts the morphologic and functional effects of estrogens, at least partially. The experimental technic consisted in measurements of opening and closing pressure of the sphincter system and in that of the rapidity of outflow. Anesthetics reduce an increased resistance; therefore a reflex mechanism must be assumed. Results obtained with curare and papaverine show that the external sphincter, though hypertrophic, does not materially contribute to the resistance of emptying. Experiments with atropine and ergotamine show that both cholinergic and adrenergic stimuli account for the resistance opposed to micturition by the internal sphincter. A disturbance of coordination between the smooth muscle sphincter and the detrusor systems accounts for the artificial prostatism of the mouse and probably for that condition in man. The functional disturbance fully accounts for difficult starting, inhibited flow and incomplete emptying of the bladder. Incoordination between sphincter and detrusor leads to functional hypertrophy of the latter. The loop of Heiss (Wesson), though included in the internal sphincter, forms an integral part of the detrusor and it hypertrophies along with the latter, thereby adding to the resistance to emptying. These are the cholinergic components of the system. To the detrusor hypertrophy a concomitant hypertrophy of the adrenergic part of the sphincter is incidental. From such a vicious circle in the functional sphere results the retention syndrome characterized by occasional sudden complete obstruction, whereas a catheter still passes without significant resistance. This whole functional disturbance is claimed to be incidental to periurethral adenoma ("prostatic hypertrophy"), which in its turn has been claimed by previous authors to originate from an endocrine imbalance. There are obvious pathologic and therapeutic implications in this concept.

Electron Microscope

In the town of Delft, where almost three hundred years ago Anthony van Leeuwenhoek made his epochal microscopic observations, an electron microscope was constructed by Mr. J. B. Le Poole. After preliminary attempts a new model of this instrument was completed in 1943. It is pointed out that the features of improvement in comparison with existing models consist of three instead of two "lenses" guiding the beam of electrons and such simplifications as are likely to reduce the cost of the instrument. The work was done in the Laboratories for Technical Physics in the Technical High School of Delft.

Personal

Professor H. Berkelbach van der Sprenkel has been appointed to the chair of histology at Utrecht University made vacant by the retirement of Professor J. Boeke.

At the University of Groningen Professor J. L. B. Engelhard retired from the chair of obstetrics and gynecology, to which Professor R. Remmelts was appointed. Professor H. M. Dekking was appointed to the chair of ophthalmology.

Field Marshal Jan Christiaan Smuts, president of the Union of South Africa, who visited this country October 10-12, was granted the degree of doctor honoris causa in jurisprudence by Leiden University.

The death was announced of Professor A. Klein, emeritus hygienist and pharmacologist of the University of Groningen. He became professor in 1907; during the war he was deported by the occupants to camps for Jews, but he survived to reach the age of 80.

Miscellaneous

At a national congress on health at Amsterdam the problem of rehabilitation of those mutilated in the war was discussed. Twelve hundred people are waiting for protheses to replace lost arms and legs. It was pointed out that provision of these prostheses is urgent both for psychologic and for utilitarian reasons.

At a meeting of the Society of Physicists at Amsterdam attended by forty foreign deputies, the discovery of the Zeeman effect was commemorated. Professor Zeeman in 1896 at the age of 30 discovered the influence of a strong magnetic field on the spectrum of radiation emitted by glowing sodium. He concluded that the phenomenon must be due to negatively charged corpuscles with a mass more than 1,800 times smaller than that of a hydrogen atom. This discovery, for which in 1912 the Nobel prize was awarded to Zeeman and Lorentz, had fundamental importance for subsequent investigations on atomic structure, such as those of N. Bohr and of Schrödinger. The ultimate results of these researches are theories on which the exploitation of atomic energy is based.

BRAZIL

(From Our Regular Correspondent)

SÃO PAULO, Oct. 8, 1946.

Cancer of the Right Colon

Dr. Eurico da Silva Bastos says that although there is no anatomic boundary between the right and the left colon these distinctions are based on the physiopathology, symptomatology and therapeutics of conditions affecting the colon.

An increase in the number of cases of cancer of the colon and an increase in the operability with a simultaneous decrease in the mortality of the operative cases are shown by the statistics. Operations are performed in some 75 per cent of cases diagnosed. The operations are more radical and less dangerous now that we have better preparation and more adequate anesthesia.

Dr. Bastos had 2 survivors one year and two years and a half after the operation.

Dr. Eurico Bastos has observed 9 cases. Two thirds of the malignant lesions of the colon localize to the left and one third to the right.

Functional disturbances in diarrhea or constipation are rare. The presence of visible blood in the stools, which appears in 97.7 per cent of cases of cancer of the rectum and in 46 per cent of cancer of the left colon, appears in only 9 per cent of cases here. Search for occult blood in the stools, repeated x-rays and hematologic examination should be done.

Recently Coller, Kay and McIntyre found 62.5 per cent of metastases for cancer of the right colon and 60 per cent for cancer of the left colon, which would be in agreement with more complete drainage in the cecum than in the descending colon.

Dr. Eurico da Silva Bastos thinks that it justifies right colectomy with terminolateral anastomosis of the ileum to the transverse colon and extensive resection of the colonic segment where it localizes the tumor and of the tissues having blood vascular and lymphatic retia.

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Correspondence

IMMUNIZATION AGAINST TETANUS

To the Editor:—I noticed in Queries and Minor Notes in THE JOURNAL, October 5, the following response to a query: "In actual practice the dose of antitoxin for prophylactic purposes has ranged from 1,500 to 20,000 units. In order to avoid confusion and to cover most exigencies, a routine dose of 10,000 American units is indicated as a substitute for the 1,500 units commonly employed. Doses of 20,000 units are justified in the presence of either severe injuries or significant delay in seroprophylaxis. When doses of 20,000 units or more are employed, it is not necessary to make additional injections for any given injury."

I am convinced that the only way in which to discontinue the use of 1,500 units for prophylaxis is the removal of this package from circulation. As long as the various biologic houses distribute these packages they will continue to be used. As long as emergency rooms of hospitals use 1,500 units the physicians will inject this dose and will continue to do so in private practice. As long as teachers in medical schools preach the time dishonored dignity of the 1,500 unit dose, medical students will use the wrong dose as externs, interns and practicing physicians. As long as various agencies, such as state boards of health, distribute the 1,500 unit package, this amount will enjoy popular approval. Sad to relate, packages of 1,500 units are used almost universally for prophylaxis. In fact, the armed forces of the United States have sanctioned the routine use of this dose. This practice continues despite the accumulation of a not inconsiderable literature which describes the occurrence of tetanus despite timely prophylaxis with the customary amounts of antitetanic serum.

I am particularly interested in this problem because of a recent sad experience. A physician saw a girl aged 2 years with a severe burn of her right leg. In addition to treatment of the burn, the child received 1,500 units of antitetanic serum. Nevertheless hyperacute tetanus supervened six days later and the child died after several days despite the most intensive specific and nonspecific treatment. The pharmacist in our local hospital lost his nephew some years ago despite the administration of 1,500 units of antitetanic serum the same day the child sustained a powder burn from a toy pistol. The signs of tetanus appeared six days after the injury, and the child died on the third day of the disease despite intensive serum treatment. The late Dr. Bernard Fantus told me that one of his nephews developed tetanus of moderate severity despite the injection of 1,500 units promptly after injury. The boy recovered in response to general care and intensive serotherapy. E. J. Radley Smith (*Proc. Roy. Soc. Med.* **35**:340 [March] 1942) has reported six failures in serum prophylaxis in a London sector during two years of World War II. Four of the 6 patients developed severe generalized forms of the disease, and 2 of these died despite intensive active treatment. Moreover, in only 1 instance was the incubation period significantly prolonged. Likewise, local tetanus appeared in but 1 patient.

It is to be emphasized that antitetanic serum is a useful prophylactic agent. Its value was demonstrated in World War I, and ample animal experiments have established its unquestionable value. To be of value, antitetanic serum must be potent. Inadequately refrigerated material and material which has deteriorated from other causes must be avoided. It must be injected promptly, or within a day or so, after injury. But, above all, the dose must be adequate.

Passive immunity is a passing (transitory) immunity. Nevertheless the duration of passive immunity may be significantly prolonged by use of the proper dose of antitetanic serum. Thus, 1,500 units confer titrable immunity for two to three weeks, 10,000 units for six to ten weeks and 100,000 units for eight to eleven weeks (Spaeth, Ralph: Serum Therapy of Tetanus, *Am. J. Dis. Child.* **61**:1146 [June] 1941. Cooke, J. V., and Jones, F. G.: The Duration of Passive Tetanus Immunity, THE JOURNAL, April 10, 1943, p. 1201). Hence I feel that, as recommended in the answer to the query, packages of 10,000 to 20,000 units should be used routinely for prophylaxis. However, it is important to emphasize that passive immunity, conferred by antitetanic serum, should be supplemented later by the properly timed inoculation of tetanus toxoid, either alone or combined with other antigens. The customary dosage schedule of tetanus toxoid should be employed. However, the time of its administration should be determined by the dose of antitetanic serum injected. This procedure is justified in terms of the principle that passive immunity interferes quantitatively with the development of active immunity. If one waits six weeks after the injection of 10,000 to 20,000 units there should be a satisfactory response to tetanus toxoid. The simultaneous use of antitetanic serum and tetanus toxoid is not an acceptable procedure. In the event of a later injury considered likely to lead to the development of tetanus, a small booster dose of tetanus toxoid, such as 0.1 cc. of fluid or alum precipitated material (McBryde, Angus, and Poston, M. A.: *J. Pediat.* **28**:692 [June] 1946) will induce antitoxic titers of adequate level and duration. The tetanus toxoid may be injected without performing sensitivity tests, because allergic reactions to tetanus toxoid are extremely uncommon. This statement does not apply to antitetanic serum, which sometimes causes serious allergic responses in previously sensitized persons.

It might be illuminating to invite further discussion of this problem to improve the present dolorous situation.

RALPH SPAETH, M.D., Chicago.

Bureau of Legal Medicine and Legislation

MEDICOLEGAL ABSTRACTS

Trade Mark: Use of Red Cross Symbol by Private Manufacturer.—The Federal Trade Commission entered an order prohibiting the defendant from using the words "Red Cross" or displaying the mark of the Greek red cross on, or in connection with the sale of, its products. This order was modified by the court of appeals, and the Federal Trade Commission appealed to the United States Supreme Court.

The defendant manufactures and sells a brand of toilet tissue and paper towels in interstate commerce, on each package or roll of which are a Greek red cross and the words "Red Cross." The defendant has registered the words "Red Cross" and the red cross symbol as a trade mark and featured them in its advertisements and on its letterheads. By section 4 of the American Red Cross act of 1905 it was made unlawful "for any person or corporation, other than the Red Cross of America, not now lawfully entitled to use the sign of the Red Cross, hereafter to use such sign or any insignia colored in imitation thereof for the purposes of trade or as an advertisement to induce the sale of any article whatsoever." This section was amended in 1910 so as to make unlawful the use of the Greek red cross on a white ground or the words "Red Cross" for the purpose of trade or as an advertisement "to induce the sale of any article" or "for any business or charitable purpose" by any person other than the American National Red Cross or its duly authorized employees and agents or the sanitary and hospital authorities of the army and navy. It contains, however, a provision which reads as follows:

> That no person, corporation or association that actually used or whose assignor actually used the said emblem, sign, insignia or words for any lawful purpose prior to January fifth, nineteen hundred and five, shall be deemed forbidden by this act to continue the use thereof for the same purpose and for the same class of goods.

The defendant's use of the trade name and emblem antedated Jan. 5, 1905, but in 1942 the plaintiff charged the defendant with a violation of the Federal Trade Commission act which makes unlawful "unfair methods of competition in commerce, and unfair or deceptive acts or practices in commerce." At a hearing before the commission, the commission found that

> the use by respondent [defendant] of the words "Red Cross" and of the mark of the Greek red cross to designate its products has the tendency and capacity to mislead and deceive a substantial portion of the purchasing public, in that such name and mark represent or imply that respondent's [defendant's] products are sponsored, endorsed or approved by the Red Cross; that the Red Cross is financially interested in the sale of the products; that the products are used by the Red Cross; that the products are manufactured in accordance with sanitary standards set up by the Red Cross; or that there is some other connection between the products and the Red Cross. Not only are these, in the opinion of the Commission, reasonable inferences to be drawn from the use of the name and mark, but the record affirmatively shows that the name and mark are in fact so understood and interpreted by many members of the public.

The commission also found that statements on defendant's products that they are made by defendant and that the name and mark are registered "do not serve to correct the erroneous and misleading impression created through the use of the trade name and mark." Accordingly the commission entered an order which, among other things, forbade defendant from using the words "Red Cross" to describe its products and from displaying the Greek red cross on them. On appeal to the circuit court of appeals, this order was reversed, it being held that the order went beyond permissible limits in forbidding any use of the words and the mark. The court of appeals remanded the case to the commission for the formulation of a new order which, though not forbidding the use of the words and the symbol, might require statements which would avoid any inference that the goods were sponsored or approved or in any way connected with the American National Red Cross.

There is no suggestion that the pre-1905 use of the words and the symbol was an unlawful one. It is argued, however, that although the earlier use may have been lawful, it cannot survive a finding by the commission that the use constitutes an unfair or deceptive act or practice in commerce. It is pointed out that the 1938 amendment to the Federal Trade Commission act gave the commission power to protect consumers, as well as competitors, against unfair or deceptive practices, that there are no exceptions to that broad power and that none should be implied from the Red Cross act of 1910, which, plaintiff contends, confers no general rights but only a limited immunity and should not be construed as exempting pre-1905 users of the name and emblem from regulatory legislation of general application which Congress may from time to time enact for the protection of the public. It is also argued that by the Geneva Convention of 1929, which was ratified by the United States in 1932, the United States agreed to prohibit the use by private persons of the name and the symbol and that the Red Cross act and the Federal Trade Commission act should not be construed in favor of conduct which this nation is under international obligation to terminate.

We agree, however, with the court of appeals, said the Supreme Court. It is apparent from the terms of the 1905 and 1910 acts that Congress was concerned not only with protecting the Red Cross against pretenders but also with protecting the public against the false impression that goods purchased were the products of the Red Cross or were sponsored by it. Congress, however, did not go the full distance. It preserved the right of earlier, good faith users to continue the use of the words and the symbol. It may have concluded that the mark which had been acquired was a valuable business asset which should not be destroyed. Or it may have thought that the extent and manner of the use by the established concerns were not likely to injure the public. Whatever the purpose, continued the court, the fact remains that the good faith use of the mark by the pre-1905 users was intended to be preserved unimpaired. The court would not lightly infer that this specific right was to be swept away under the 1938 amendment to the Federal Trade Commission act; the problem is to reconcile the two acts, if possible, and to give effect to each. That could be done, the court thought, by recognizing that while the good faith use of the words and symbols by pre-1905 users is permissible, the commission may require the addition of language which removes any misleading inference that the products are in fact sponsored, approved or in any manner associated with the American National Red Cross. We only hold, concluded the Supreme Court, that under the facts of this case the commission may not absolutely forbid the use of the words and the symbol by the defendant. Accordingly the judgment in favor of the defendant was affirmed.—*Federal Trade Commission v. A. P. W. Paper Company, Inc., 66 S. Ct. 932 (1946).*

Unlicensed Physician as Expert Witness—The Supreme Court, appellate term, first department, held that it was error for the trial court to exclude the testimony of a medical witness, and a hospital record made at his direction, on the sole ground that the witness was not licensed to practice medicine in New York at the time the record was made.—*Black v. Ackerman, 63 N. Y. S. (2d) 445 (N. Y., 1946).*

Medical Examinations and Licensure

COMING EXAMINATIONS AND MEETINGS

NATIONAL BOARD OF MEDICAL EXAMINERS EXAMINING BOARDS IN SPECIALTIES

Examinations of the National Board of Medical Examiners and the Examining Board in Specialties were published in THE JOURNAL, Nov. 9, page 601.

BOARDS OF MEDICAL EXAMINERS

ALABAMA: *Examination.* Montgomery, Jan. 21-23. Secretary, State Board of Medical Examiners, B. F. Austin, M.D., 519 Dexter Ave., Montgomery.

DELAWARE: *Examination.* Dover, Jan. 14-16. *Endorsement.* Dover, Jan. 21. Sec., Medical Council of Delaware, Dr. J. S. McDaniel, 229 S. State St., Dover.

DISTRICT OF COLUMBIA: * *Reciprocity.* Washington, Dec. 9. Sec., Commission on Licensure, Dr. G. C. Ruhland, 6150 E. Municipal Bldg., Washington.

FLORIDA: * *Examination.* Jacksonville, Nov. 26-27. Sec., Dr. Harold D. Van Schaick, 2736 S.W. 7th Ave., Miami 36.

INDIANA: *Examination.* Indianapolis, June. Exec. Secretary, Board of Medical Registration and Examination, Miss Ruth V. Kirk, 627 K. of P. Bldg., Indianapolis.

KANSAS: Kansas City, Dec. 4-5. Secretary, Board of Medical Registration and Examination, J. F. Hassig, M.D., 905 North 7th Street, Kansas City.

KENTUCKY: *Examination.* Louisville, Dec. 16-18. Sec., State Board of Health, Dr. P. E. Blackerby, 620 S. Third St., Louisville 2.

MARYLAND: *Examination.* Baltimore, Dec. 10-13. Sec., Dr. E. H. Kloman, 1215 Cathedral St., Baltimore 1. *Homeopathic.* Baltimore, Dec. 10-11. Sec., Dr. J. A. Evans, 612 W. 40th St., Baltimore.

MASSACHUSETTS: *Examination.* Boston, Nov. 19-22. Sec., Board of Registration of Medicine, Dr. H. Q. Gallupe, 413-F State House, Boston 33.

MICHIGAN: * Ann Arbor, Dec. 9-11. Sec., Board of Registration in Medicine, Dr. J. E. McIntyre, 100 W. Allegan St., Lansing 8.

MINNESOTA: * Minneapolis, Jan. 21-23. Sec., Dr. J. F. Du Bois, 230 Lowery Medical Arts Bldg., St. Paul 2.

MISSISSIPPI: *Reciprocity.* Jackson, Dec. Asst. Sec., State Board of Health, Dr. R. N. Whitfield, Jackson 113.

NEBRASKA: * *Examination.* Omaha, June 1947. Director, Bureau of Examining Boards, Mr. Oscar F. Humble, State Capitol Building, Lincoln.

NEW HAMPSHIRE: Concord, March 13. Sec., Board of Registration in Medicine, Dr. John S. Wheeler, 107 State House, Concord.

NORTH CAROLINA: *Examination.* Winston-Salem, Dec. 16-19 postponed. *Endorsement.* Raleigh, Jan. 16. Act. Sec., Mrs. L. McNeill, 226 Hillsboro St., Raleigh.

NORTH DAKOTA: Grand Forks, Jan. 7-10. Secretary, Dr. G. M. Williamson, 4½ S. Third St., Grand Forks.

OHIO: *Examination.* Columbus, Dec. 3-5. Sec., Dr. H. M. Platter, 21 W. Broad St., Columbus.

SOUTH DAKOTA: * *Examination and Reciprocity.* Vermillion, Jan. 21-22. Secretary, Board of Medical Examiners, Dr. Gilbert Cottam, State Capitol Building, Pierre.

VERMONT: *Examination.* Burlington, Jan. 31-Feb. 1. Secretary, Board of Medical Registration, Dr. F. J. Lawliss, Richford.

VIRGINIA: Richmond, Dec. 3-6. Secretary, Board of Medical Examiners, Dr. J. W. Preston, 30½ Franklin Rd., Roanoke.

WASHINGTON: *Examination.* Seattle, Jan., 1947. Secretary, Mr. Nelson Vaughn, Olympia.

* Basic Science Certificate required.

BOARDS OF EXAMINERS IN THE BASIC SCIENCES

ARIZONA: Dec. 10. Sec., Mr. Francis A. Roy, Science Hall, University of Arizona, Tucson.

COLORADO: Denver, Dec. 11-12. Sec., Dr. Esther B. Starks, 1459 Ogden St., Denver.

IOWA: Des Moines, Jan. 14. Corresponding Sec., Division of Licensure & Registration, Mr. H. W. Grefe, Capitol Bldg., Des Moines 19.

SOUTH DAKOTA: Sioux Falls, Dec. 6-7. Sec., Dr. G. M. Evans, Yankton.

TENNESSEE: Memphis and Nashville, Dec. 19-20. Sec., Dr. H. W. Qualls, 130 Madison Ave., Memphis 3.

WISCONSIN: Milwaukee, Dec. 7. Sec., Professor Robert N. Bauer, 152 W. Wisconsin Ave., Milwaukee 3.

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Current Medical Literature

AMERICAN

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Titles marked with an asterisk (*) are abstracted below.

American J. Obstetrics and Gynecology, St. Louis

52:1-178 (July) 1946. **Partial Index**

*New Method of Treatment for Vaginitis and Cervicitis. S. L. Siegler. —p. 1.
*Test for Determining the Time of Ovulation and Conception in Women. E. J. Farris.—p. 14.
Delayed Ovulation, Significant Factor in Variability of Menstrual Cycle. I. Rossman and G. W. Bartelmez.—p. 28.
Semen Analysis in 1,500 Cases of Sterile Marriage. J. MacLeod and R. S. Hotchkiss.—p. 34.
Weight Control, Diet and Fluid Balance in Pregnancy. C. H. Loughran. —p. 42.
Therapeutic Abortion in General Hospital. W. T. Dannreuther.—p. 54.
Interpretation of Pathogenesis of Pelvic Infection as Determined by Cornual Resection. H. C. Falk.—p. 66.
Clinical Diagnosis of Varying Degrees of Uterine Contraction Rings. H. W. Johnson.—p. 74.
Persistence of Gonococcus in Female Adnexa. A. Cohn, I. Grumstein and C. E. Heaton.—p. 83.
Intrapartum Fever: Preliminary Study. L. D. Odell and E. D. Plass. —p. 89.
Continuous Spinal Analgesia in Cesarean Section: Advantages, Technic and Analysis of 300 Cases. J. C. Ullery.—p. 100.
Rh Factor in Obstetrics. M. O. Belson.—p. 106.
Kielland Forceps for Use in Occipitoposterior and Occipitotransverse Positions. J. I. Kushner and P. B. Wahrsinger.—p. 110.
Origin of Adrenal-like Tumor of Ovary (Hypernephroma of Ovary, Adrenal Tumor of Ovary, Masculinovoblastoma, Luteoma, Luteinoma). A. H. Curtis.—p. 115.
Abdominal Pregnancy with Placenta Attached to Spleen. D. H. Kushner and F. A. Dobrzynski.—p. 160.

New Treatment for Vaginitis and Cervicitis.—Siegler believes that the ideal anti-infective agent should be buffered effectively so as to promote the reestablishment of the physiologically correct acidity and growth of Döderlein's bacilli consistent with a healthy vagina. It should be antibacterial so as to control rapidly persistent infections especially in cervicitis requiring electrosurgery, it should be of such a physical consistency as to assure intimate and prolonged contact with vaginal and vervical mucosa, and it should be nonirritating and nontoxic. These conditions are most closely approached by an acid jelly containing sulfathiazole, lactic acid, acetic acid, sodium tetradecyl sulfate and polyethylene glycol. The jelly is nonirritating, nonstaining and of agreeable odor. It spreads over the cervical and vaginal surfaces and is completely soluble in the secretions. It does not easily leak out of the vagina unless the discharge is profuse. It has a mild but definite astringent effect on the vaginal mucosa. Use of the jelly has resulted in excellent control of vaginitis of trichomonal, monilial, gonococcal and nonspecific origin in 93 per cent of the cases studied, and in permanent cure in 83 per cent. The period of convalescence can be shortened and annoying symptoms reduced by using the jelly before and after such procedures as conization, coagulation, cautery and plastic repairs and other intravaginal surgery. Healing was complete within an average time of five weeks, with a minimum of sequelae. The convenience and simplicity of the single dose disposable paper applicator facilitates intravaginal medication in the office and in the patient's home.

Time of Ovulation and Conception in Women.—Farris determines ovulation by the reaction of the ovary of the immature white rat to the urine of the patient. If ovulation is not taking place, the patient's urine has no effect on the ovary of the rat; if it is taking place, the rat's ovaries become hyperemic. Urine passed on arising in the morning is employed. The test animal is an immature Wistar rat. Two cc. of the urine is injected subcutaneously into each of 2 animals. At the end of two hours the rats are killed by illuminating gas. Their abdomens are opened immediately. Each ovary is inspected, and its degree of redness is compared with the colors of the Munsell color chart. Observations were made on 88 married and 12 unmarried women. Of the married women 76 wished to become pregnant. Fifty of them had been inseminated artificially for periods varying from a few months to several years, with no conceptions resulting. Most of the women who were tested showed a positive test for three or four successive days each month at the usually accepted ovulation time. This is termed the normal reaction. A few women showed a positive test for one or two days at approximately the same period sometimes followed by a day or more of negative test, then a second positive test for one or two days. This is termed abnormal reaction. Results thus far indicate the third or fourth day of a normal reaction as the time when insemination is most likely to produce pregnancy. Women have not become pregnant in months in which they exhibited no reactions or abnormal ones.

American Journal of Public Health, New York

36:837-962 (Aug.) 1946

Manitoba Health Plan. F. W. Jackson.—p. 837.
Plague Control with DDT and "1080": Results Achieved in Plague Epidemic at Tumbes, Peru, 1945. A. Macchiavello.—p. 842.
Education of Medical Students in Preventive Medicine. W. G. Smillie. —p. 855.
Training for Health Education. I. V. Hiscock.—p. 859.
Problems of Recruitment and Training. J. G. Stone.—p. 864.
Accident Prevention. D. B. Armstrong and W. G. Cole.—p. 869.
Practical Aspects of Communicable Disease Control in Schools. S. Frant.—p. 875.
Developments in Science of Nutrition During World War II. C. G. King and O. Salthe.—p. 879.
Study of Nutritional Status and Food Habits of Otomi Indians in Mezquital Valley of Mexico. R. K. Anderson, J. Calvo, Gloria Serrano and G. C. Payne.—p. 883.
Proposed Report on the Educational Qualifications of Health Officers. W. P. Shepard.—p. 904.
Medical Care in Maryland. R. H. Riley.—p. 908.
Health Insurance Plan of Greater New York: General Statement of Its Principles and Program. D. A. Clark.—p. 912.

Archives of Otolaryngology, Chicago

44:129-252 (Aug.) 1946

*Irradiation of Nasopharyngeal Lymphoid Tissue: An Evaluation. L. R. Boies.—p. 129.
Plastic Repair of Deflected Nasal Septum. S. Fomon, V. R. Syracuse, N. Bolotow and M. Pullen.—p. 141.
Modified Radical Mastoidectomy: Indications and Technic: (Semiradical Mastoidectomy, Modified Tympanomastoidectomy, Heath Mastoidectomy, Bondy Mastoidectomy). W. L. Simpson.—p. 157.
Traumatic Palatal Fistula. L. E. Wible and J. C. Howard.—p. 159.
Absence or Near Absence of Excitant Effects from Administration of Tuamine. E. M. Boyd, Joan Copeland and F. H. Lapp.—p. 166.
Penicillin in Field of Otolaryngology: Clinical and Bacteriologic Studies, with Special Reference to Topical Applications. Elizabeth DeBlois. —p. 174.
Diplacusis and Acuity of Hearing. J. P. Minton.—p. 184.
*Laryngeal Tuberculosis. O. Auerbach.—p. 191.
Nasopharynx in Epidemic of Streptococcic Infection. O. B. McGillicuddy.—p. 202.
Cartilaginous Septum in Reconstruction of Nose: Modified Procedure. E. J. Elsbach.—p. 207.
Otitis Media and Complications. B. R. Dysart.—p. 223.

Irradiation of Nasopharyngeal Lymphoid Tissue.—Boies says that the lymphoid tissue of Rosenmüller's fossa and the nodules which occur in the mucosa of the orifice of the eustachian tube and within its lining are now considered to play an important role in early hearing loss in children. In children 8 to 14 years of age there is a high incidence (nearly 40 per cent) of impairment of thresholds for some of the tones above C4; that is, for frequencies higher than 2,048 cycles per second. A common cause of this hearing loss is to be found in the catarrhal changes of the middle ear which originate from infected lymphoid tissue in the nasopharynx. Irradiation of pharyngeal lymphoid tissue is not new. The author's observations of this treatment were made on 73 patients. Small doses of radium or radon filtered so as to yield chiefly the beta rays seem effective in controlling the pathologic effect of small amounts of this tissue in its relation to the normal function of the eustachian tube. The dose is so small that no local reaction is observed. The role of hyperplastic lymphoid tissue in block-

age of the eustachian tube has a new interest through observations of air corpsmen in whom the condition called aero-otitis media developed.

Laryngeal Tuberculosis. — Auerbach and his colleagues routinely examined the larynx in the course of necropsies for gross and microscopic pathologic changes. An opportunity was thus afforded to study the mode of development and the progression of laryngeal tuberculosis as well as its relationship to tuberculosis in other parts of the body. Laryngeal tuberculosis was present in 304 (37.5 per cent) of 811 cases of tuberculosis which came to necropsy. In all but 2 instances it developed as a direct infection from positive sputum in chronic pulmonary tuberculosis. Tuberculous foci, with and without central zones of caseation, form in the walls of the larynx as a result of tubercle bacilli which enter through the ducts of the mucous glands. Ulceration develops either through pressure atrophy of the mucous membrane by the tuberculous foci or by caseous necrosis of the overlying epithelium as the tuberculous areas enlarge. The further progression of the ulcerative process is similar to that in other parts of the body. Ulcers were found most frequently on the true vocal cords. Healing may occur in any stage of anatomic development, usually in cases in which underlying chronic pulmonary tuberculosis undergoes anatomic healing. In some instances healing and progression keep pace in the same larynx, resulting in a pronounced thickening of the wall, nodular protrusions into the lumen and narrowing of the canal.

Archives of Pathology, Chicago

42:1-112 (July) 1946

Tumor of Tactile End Organs. J. Cammermeyer.—p. 1.
Pathologic Aspects of Atmospheric Blast Injuries in Man. H. Cohen and G. R. Biskind.—p. 12.
Structure of Testis in Infancy and Childhood, with Discussion of So-Called Underdeveloped Testis. P. Gruenwald.—p. 35.
*Renal Changes Associated with Chloride Deficient Diet in Rat. Elizabeth Lowenhaupt and D. M. Greenberg.—p. 49.
Angiomatoid Formations in Genital Organs With and Without Tumor Formation. R. P. Morehead.—p. 56.
Hepar Lobatum: Clinical Significance of Anatomic Changes. D. Symmers and D. M. Spain.—p. 64.
Birefringence in Tissues. A. L. Lichtman and J. R. McDonald.—p. 69.
*Experimental Atherosclerosis: IX. Effect of Prolonged Feeding of Egg Yolk in Rats. J. A. Rosenkrantz and M. Bruger.—p. 81.

Chloride Deficiency and Renal Changes.—Lowenhaupt and Greenberg say that chemical changes occurring in tissues and body fluids of rats fed a diet deficient in chloride consist in a lowering of the concentration of blood chloride, an increase of the concentration of blood bicarbonate and an increase of the urinary excretion of citrate, all indicative of chronic alkalosis. There is a characteristic shift in the water of the body, in which the apparent extracellular phase is increased in most of the tissues. As happens with most deficiencies, the growth of the rats is stunted. The deficient animals attained only about 50 per cent of the weight of the controls when the chloride content of the diet was reduced to between 2 and 5 mg. per hundred grams of food. A renal lesion uniformly develops in rats maintained on a chloride deficient diet. Early in the process calcium is precipitated in the lumens of collecting tubules, with consequent blocking and hydronephrosis. A granulomatous inflammatory response is a characteristic early reaction to the foreign material and to the degenerating tubular epithelium. Chronic alkalosis is suggested as the basis of the precipitation of calcium.

Experimental Atherosclerosis.—The feeding of cholesterol will produce atherosclerosis readily in rabbits and with more difficulty in guinea pigs. Attempts to obtain these vascular changes in rats, mice, cats, dogs, monkeys, goats, foxes, chickens, pigeons and parrots have been unsuccessful. Hypercholesteremia and atherosclerosis readily develop in the rabbit because this animal is unable to metabolize exogenous cholesterol. Since diets enriched with egg yolk have been shown to produce hypercholesteremia in man, monkeys and dogs without vascular sclerosis, Rosenkrantz and Bruger decided to extend this investigation to include white rats. They found that the prolonged feeding of egg yolk powder to rats augmented the cholesterol content of the blood and the liver but failed to produce atherosclerosis of the aorta. The lecithin content of the liver was not increased by the feeding of egg yolk. Deposits of fat appeared in the liver six to nine months after the feeding of egg yolk was begun. Under the conditions of this experiment the lecithin present in egg yolk failed to inhibit lipoid infiltration of the liver. During the latter months of the experiment the rats fed egg yolk powder gained weight more rapidly than did the control rats. The systolic blood pressure was not elevated in rats fed egg yolk powder.

Cancer Research, Baltimore

6:385-448 (Aug.) 1946

Hypophysectomy in Mice, with Special Reference to Mammary Cancer: Report on Outcome of 351 Operations. R. Korteweg and F. Thomas.—p. 385.
Heterologous Transplantation of Mouse Tumors Induced in Vitro. H. S. N. Greene.—p. 396.
Production of Carcinogenic Agent in Degradation of Cholesterol to Progesterone. F. Bischoff and J. J. Rupp.—p. 403.
Physiologic Studies on Tumor Inhibiting Agents: II. Effect on Rectal Temperatures in Normal Rabbits of Serratia Marcescens Tumor Necrotizing Polysaccharide of Shear. L. V. Beck and Mary Fisher.—p. 410.
Induction of Sarcoma of Liver in Rat with Methylcholanthrene and Benzpyrene. M. J. Eisen.—p. 421.
Nucleic Acids in Human Tumors. R. E. Stowell.—p. 426.
Multiple Malignant Growths. H. L. Lombard, M. L. Levin and S. Warren.—p. 436.

Georgia Medical Association Journal, Atlanta

35:189-216 (July) 1946

Early Diagnosis of Neurosurgical Lesions. W. McK. Craig.—p. 189.
Correction of Nature's Mistakes by Operative Intervention. O. S. Lowsley.—p. 193.
The Medical Practice of Dr. W. B. Freeman: Carnesville, Georgia, 1825-1826. J. Krafka.—p. 197.
Benign Papilloma of Ureter. E. Felber.—p. 200.

35:217-242 (Aug.) 1946

Tumult in Medicine—Psychosomatic Analysis. R. H. Chaney.—p. 217.
Visualization of Traumatic Popliteal Aneurysm Before and After Operation: Case. T. Harrold and M. Mass.—p. 222.
Etiology of Convulsions. H. S. Swanson.—p. 225.
Treatment of Epilepsy in Children with Sodium Dilantin. B. Bashinski.—p. 228.
Observations of Electroencephalic Patterns in Convulsive Disorders of Suspected Endocrine Origin: Preliminary Report. Estelle P. Boynton.—p. 229.
Lead Pencil in Ileum: Case. M. W. Anderson.—p. 235.

Journal Pharmacology & Exper. Therap., Baltimore

87:193-328 (July) 1946. **Partial Index**

Action of Sodium Salicylate and Sulfadiazine on Hyaluronidase. F. Guerra.—p. 193.
Digitalis: II. Chemical Evaluation of Tablets of Digitoxin. F. K. Bell and J. C. Krantz Jr.—p. 198.
Chemotherapy of Plasmodium Knowlesi Infections in Macaca Mulatta Monkeys. A. P. Richardson, R. I. Hewitt, L. D. Seager, M. M. Brooke, F. Martin and H. Maddux.—p. 203.
Studies on Pharmacology of Salicylates. P. K. Smith, Helen L. Gleason, C. G. Stoll and S. Ogorzalek.—p. 237.
Pharmacodynamic Studies of New Antihistamine Agent, N'-Pyridyl-N' Benzyl-N-Dimethylethylene Diamine HCl, Pyribenzamine HCl: I. Effects on Salivation, Nictitating Membrane, Lacrimation, Pupil and Blood Pressure. F. F. Yonkman, Dorothy Chess, D. Mathieson and Nicoline Hansen.—p. 256.
Barbiturate Antagonism of Isonipecaine Convulsions and Isonipecaine Potentiation of Barbiturate Depression. E. L. Way.—p. 265.
Pharmacology of Di-Isopropyl Fluorophosphate (DFP) in Man. J. H. Comroe Jr., J. Todd and G. B. Koelle.—p. 281.
Studies with Tetrazole Derivatives. E. G. Gross and R. M. Featherstone.—p. 291.
Specificity of Sex Hormones on Tissue Aldehyde Shift in Rat Kidney and of Fuchsin Sulfurous Acid Reagent on Aldehydes. K. A. Oster and Jean G. Oster.—p. 306.
Chemotherapeutic Properties of Sulfanilanilides. L. H. Schmidt and Clara L. Sesler.—p. 313.

Laryngoscope, St. Louis

56:325-392 (July) 1946. **Partial Index**

Labyrinthine Dropsy. J. R. Lindsay.—p. 325.
*Use of Antireticular Cytotoxic Serum (ACS) in Atrophic Rhinitis (Ozena). C. C. R. Jackson.—p. 342.
Oral Penicillin in Otolaryngology. D. M. Lierle and W. D. Paul.—p. 352.
Sound Source for Otologist. H. B. Perlman.—p. 360.

Antireticular Cytotoxic Serum in Atrophic Rhinitis.—The serum used by Jackson was prepared in rabbits on the assumption that fewer persons would show allergic skin reactions following the injections. The dosage was 0.5 cc., 1 cc.

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and 1.5 cc. of a 1:10 dilution of the serum in saline solution hypodermically, with an interval of three days between doses. No change was made in the patient's routine of life or nasal hygiene. Five weeks after the last injection of serum the patients were reexamined. The treatment was employed on 24 patients ranging in age between 22 and 70 years. Twenty of the patients had atrophic rhinitis (ozena) and 4 had atrophic nasopharyngitis. There was no improvement in the majority of patients, but a few showed some improvement mostly in subjective phenomena. No change was noted in the size of atrophic structures. The cause of the difference between these results and those reported by the Russians is not obvious.

Maine Medical Association Journal, Portland

37:181-206 (July) 1946

Glycerite of Hydrogen Peroxide: Evaluation of Its Clinical Effects in Mixed Infections of Skin and Mucous Membranes. E. A. Brown. —p. 181.
Progress in Treatment of Gonorrhea. G. C. Poore.—p. 185.

37:207-230 (Aug.) 1946

Presidential Address. A. P. Leighton.—p. 207.
Internal Derangements of Knee Joint. W. G. Dixon.—p. 214.
No Need for Change: Every Medical New Deal Less Successful. A. H. Scolten.—p. 218.

New England Journal of Medicine, Boston

235:147-178 (Aug. 1) 1946

*Infectious Hepatitis in Massachusetts, with Review of Present Knowledge of the Disease. Harriet L. Hardy and R. Feemster.—p. 146.
Modern Governmental Medical Problems. R. W. Bliss.—p. 158.
Acute Poliomyelitis in Pregnancy: Its Occurrence According to Month of Pregnancy and Sex of Fetus. L. Aycock.—p. 160.
Unusual Case of Foreign Body in Neck.—p. 162.
Diseases of Veins. J. Homans.—p. 163.
Benign Stricture of Common Bile Duct; Choledochoduodenocholic Fistula; Multiple Abscesses, Hepatic, Subhepatic and Diaphragmatic.—p. 168.
Benign Peptic Ulcer.—p. 171.

Infectious Hepatitis in Massachusetts.—The clinical material used as the basis of this report was collected by visits to Massachusetts communities from which the disease was informally reported to the department of public health. Approximately 175 cases of infectious hepatitis were uncovered in Massachusetts in these investigations, but only 151 case histories are used in this report, since in the remaining cases insufficient data were available. The term "infectious hepatitis" is used to designate sporadic cases and "infectious epidemic hepatitis" for groups of cases during outbreaks. The term "homologous serum jaundice" is used to refer to hepatitis artificially acquired from any source. It is now held that infectious hepatitis is caused by a specific virus. The disease confers lifelong immunity in most instances. The transmission seems to take place by contact of a susceptible person either with a patient having the disease or with material contaminated by the causative virus. It seems certain that the virus can be carried in food. It may be carried in water. Hardy and Feemster make a plea for the careful handling of infectious hepatitis, since the disease may cause irreversible hepatic changes and seems to be particularly serious in pregnant women. Gamma globulin has no place in the treatment of the active phase of infectious hepatitis, but since it has been shown to be capable of producing passive immunity of six to eight weeks' duration it should be useful in the control of small outbreaks.

New York State Journal of Medicine, New York

46:1647-1758 (Aug. 1) 1946

Protein Deficiency Conditions Observed in Private Practice. R. R. Scobey.—p. 1691.
Chancroid Disease and Its Treatment. F. C. Combes.—p. 1700.
*Use of Penicillin Aerosol in Bronchopulmonary and Sinus Infections. A. L. Barach, Bettina Garthwaite and C. Rule.—p. 1703.
*Analysis of Surgical Failures and Fatalities Following Thoracolumbar Sympathectomy for Essential Hypertension. J. W. Hinton and J. W. Lord Jr.—p. 1714.

Penicillin Aerosol in Bronchopulmonary and Sinus Infections.—Barach and his associates report improvements in the original technic of administering penicillin by inhalation, which consist in humidifying the aerosol by passing it over hot water and in eliminating large particles either by a baffle connected to the conventional nebulizer or by an especially constructed nebulizer, both procedures aimed to avoid irritation and red tongue. The advantages of administering penicillin by inhalation can be discerned in lung abscess, in sinusitis and in selected cases of bronchiectasis, in each of which bacteria may grow on a fibromucopurulent surface that is not reached by a capillary blood supply. The authors describe and illustrate new apparatus.

Thoracolumbar Sympathectomy for Essential Hypertension.—During the past four years Hinton and Lord have operated on 227 patients for essential hypertension, 152 being operated on by the Smithwick technic. Beginning in June 1945 the authors started to extend the operation to the higher thoracic ganglions, and by December 1945 they were including from the third thoracic to the second lumbar inclusive in most operations and always through the fourth thoracic ganglion. Twenty-six of the 227 patients died, a mortality of 11.5 per cent. The immediate mortality was higher in the more extensive operative procedure. The fatalities have been divided into three groups. In group 1 all four major organs—eyes, cerebral vessels, heart and kidneys—were involved. There were 15 cases in this group, and if the degree of involvement in each organ is graded from 1 to 4 plus, it was found that these 15 cases averaged 12.5 plus out of a maximum of 16. Operative procedure in these cases indicated poor judgment. In group 2 there were three organs involved in 7 cases and they averaged 8 plus. In group 3 there were two organs involved and 4 cases, with 8 plus. In the latter two groups there was some justification for operation, as the organs were not completely damaged by the long standing essential hypertension. The authors think that, if the degree of involvement in all organs exceeds 8 plus, it is questionable whether a thoracolumbar sympathectomy will give lasting results.

Occupational Medicine, Chicago

2:1-92 (July) 1946

Health Protection in Production and Use of Atomic Energy. W. F. Bale.—p. 1.
Anthrax: Its Diagnosis and Treatment. H. F. Smyth.—p. 8.
Bernardino Ramazzini: His Life, Deeds and Book. R. T. Legge. —p. 22.
Importance of Researches on War Gases to Clinical Medicine. W. T. Longcope.—p. 34.
Surgery in Industry. H. E. Mock.—p. 45.
Disease Resulting from Use of Pneumatic Tools. F. M. Peters.—p. 55.
Practical Benefits of Industrial Health Service. V. G. Heiser.—p. 67.

Ohio State Medical Journal, Columbus

42:801-888 (Aug.) 1946

Considerations on Poliomyelitis. J. A. Toomey.—p. 825.
Evolution of Poliomyelitis Treatment. E. H. Wilson.—p. 828.
Treatment and Results of Treatment in Anterior Poliomyelitis. S. G. Gamble.—p. 831.
Functions of State Health Department in Control of Poliomyelitis. R. E. Heering.—p. 835.
Progress of Research in Poliomyelitis. T. Francis Jr.—p. 838.
Spontaneous Occlusion of External Iliac Artery: Case. A. R. Smith and W. G. Harding.—p. 841.
Ruptured Congenital Aneurysm of Sinus of Valsalva with Superimposed Endocarditis, with Rupture of Aortic Cusp Producing Sudden Death. T. L. Ramsey and V. T. Mosquera.—p. 843.

Yale Journal of Biology and Medicine, New Haven

18:473-632 (July) 1946

Early Years of Kjeldahl Method to Determine Nitrogen. H. B. Vickery. —p. 473.
Surface Potentials and Peripheral Nerve Injury: Clinical Test. R. G. Grenell and H. S. Burr.—p. 517.
Thiourea and Related Compounds in Treatment of Hyperthyroidism. A. W. Winkler and T. S. Danowski.—p. 527.
Psychology and Scientific Fallacy. C. D. King.—p. 541.
Dermatoglyphics: Significant Patternings of Body Surface. H. Cummins.—p. 551.
Relationship Between Military Loss Resulting from Casualty and Days Lost from Active Duty. H. Lamport.—p. 567.
Note on Incidence of Diabetes Mellitus in Fractures of Hip. W. E. Kenney.—p. 577.
Necrotizing Disease in Rabbits Affecting Fatty and Muscular Tissues: Analogies with Weber-Christian Disease of Humans. F. Duran-Reynals.—p. 583.
Clinical Aspects of Evaluating Analgesic Agents, with Notes on Safety of Morphine. R. C. Batterman.—p. 595.
Studies on Resistance to Antibiotics: I. Action of Penicillin on Some Gram-Positive and Gram-Negative Organisms and Its Potentiation by Various Inhibitors. H. P. Treffers.—p. 609.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

British Journal of Urology, London

18:53-104 (June) 1946

*Embryoma of Kidney in Adult. R. M. Hill.—p. 53.
Retrograde Movement of Ureteric Calculi. T. Moore.—p. 60.
Infection of Urinary Tract in Female Due to Trichomonas Vaginalis. B. Williams.—p. 63.

Embryoma of Kidney in Adult.—Thirty-five cases of Wilms' tumor have been reported in the literature; only 4 adult patients have survived for an appreciable time and 2 of these are known to be alive at the present time, ten and three years after nephrectomy. A third such case in a woman aged 35 is reported by Hill. Nephrectomy was performed and the removal of a lipoleiomyoangiosarcoma was followed by high voltage roentgenotherapy to the site of the tumor (3,500 roentgens). Microscopic examination of the specimen did not reveal any squamous cell nests such as have been described in some cases. The essential picture was of fatty, fibrous, muscular and vascular tissue composed of highly primitive cells showing varying and at times little differentiation, apparently originating from the renal blastema. Repeated examinations of the patient at intervals during the past five years have shown no evidence of recurrence, the patient having remained in good health.

Edinburgh Medical Journal

53:273-336 (June) 1946

Surgical Pathology of Peptic Ulcer and Gastric Carcinoma. J. Morley.—p. 273.
Use of Isotopes in Biology. J. H. Gaddum.—p. 284.
*Some Serologic Aspects of Infectious Mononucleosis, with Special Reference to Use of Agglutinin Absorption Tests in Diagnosis. G. Dempster.—p. 296.
Studies on Phagocytosis. J. W. Czedalowski.—p. 311.
Daniel Whistler and His Contribution to Pediatrics. H. P. Tait.—p. 325.

Serologic Aspects of Infectious Mononucleosis.—Dempster has analyzed 170 serums since 1943. The correlation is high between the clinical and the serologic diagnosis of infectious mononucleosis when the absorption test is used (66 per cent). The direct Paul-Bunnell test is of limited value especially in late and relapsed cases. In high titer cases (1:250) the direct test will suffice, but a considerable number of cases may never reach such high titer. Seronegative cases occur, but they form a low proportion of this series (26 per cent). Variations in titer occur during the illness. An application of Barrett's absorption technic to a series of cases in which serum therapy had been administered did not give satisfactory results, for complete absorption of the antibody, by either of the antigens employed, was not demonstrated. There appears to be a nonspecific stimulation of the normal heterophile antibody in acute febrile illnesses. An abridged absorption test may be employed in the routine serologic diagnosis of infectious mononucleosis.

Lancet, London

2:185-220 (Aug. 10) 1946

Epidemiology and Psychosomatic Affections: Study in Social Medicine. J. L. Halliday.—p. 185.
Variation in Female Pelvis. C. Nicholson and H. S. Allen.—p. 192.
Mass Immunization of a Force in the Field Against Diphtheria. J. S. K. Boyd.—p. 195.
Erysipeloid: Survey of 115 Cases. P. F. King.—p. 196.
*Direct Test for Blocking Antibody in Treated Hay Fever. Kate Maunsell.—p. 199.
*Gray Hair in Ill Nourished Children. Lucius Nicholls.—p. 201.

Blocking Antibody in Hay Fever.—Maunsell studied the development of the blocking antibody in specifically and in nonspecifically treated hay fever patients. Instead of injecting mixtures of isoserum and pollen into nonsensitive skin, the skin of the hay fever subjects was tested with mixtures of their own serum and pollen. A "direct" blocking test with autoserum was thus worked out with the object of detecting and titrating the inhibiting substance. Twenty-four allergic subjects who were sensitive to pollen only or to pollen and house dust were divided into two groups according to the treatment they received. In group 1 (11 cases) specific desensitization was carried out. The sensitive subjects received the routine course from 30 to 50 subdermal "pollaccine" injections, ranging from 20 to 100,000 Noon units per cubic centimeter. In group 2 (13 cases) nonspecific desensitization was attempted by the administration of unpooled human isoserum. The subjects received from three to six intravenous injections of from 10 to 30 cc. at intervals of a week. The serum was derived from nonallergic group A donors and given to the allergic recipients irrespective of their blood group. The development of a blocking antibody in the serum of specifically treated hay fever subjects was confirmed by this method. The blocking titer may be used as a guide for assessing clinical protection. No blocking antibody was detected in hay fever subjects treated with nonspecific injections of human isoserum.

Gray Hair in Ill Nourished Children.—Nicholls observed graying of the hair in children in Malaya aged between 5 and 12 years. The children had been in refugee camps. The hair of all the races of the tropics is black or nearly black; hence the diagnosis presents no difficulty, especially as the loss of pigment is seldom distributed evenly throughout the length of the hairs. It may be difficult to diagnose the condition in persons whose hair is fair. Pantothenic acid deficiency in black rats is followed by loss of pigment in the fur. Necropsies on these rats reveal necrosis of the adrenal glands, and the graying appears to be due to a loss of activities between one or more hormones and this vitamin. Some degree of graying of the fur of animals can be produced by other deficiencies than that of pantothenic acid; a deficiency of copper is an example. Most of the children observed by the author had been living largely on manioc root, and the vitamin deficiencies were multiple.

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Carbon Monoxide Period (Generator Gas Period) in Sweden 1939-1945; Clinical and Social-Medical Review. E. B. Salén.—p. 923.
Treatment of Intestinal Disturbances with Yogurt Bacteria in Tablet Form. K. Schroeder.—p. 935.

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Carbon Monoxide (Generator Gas) Intoxication in Chauffeurs in Copenhagen in 1944. A. Grut.—p. 937.

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Changes in Visual Field in Chronic Carbon Monoxide (Generator Gas) Intoxication. T. Helminen.—p. 945.
Observations Concerning COHb Content of Blood in Workers with Automobiles. L. Noro and N. Saksela.—p. 948.
Otoneurologic Symptoms in Chronic Carbon Monoxide (Generator Gas) Intoxication. U. Siirala and J. Lumio.—p. 951.
*Significance of Tonsillectomy in Convalescents from Diphtheria. E. Valheri.—p. 951.

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*Diagnostic Value of Tipping and Pointing Reaction in Otoneurologic Examination in Cases of Carbon Monoxide Intoxication with Vestibulocorticospinal Disturbances in Function. H. Nyman.—p. 955.
Cardiac Changes in Carbon Monoxide (Generator Gas) Intoxication. S. Almgren.—p. 958.
Eosinophil Granulomatosis. B. Beskow.—p. 965.

Significance of Tonsillectomy in Convalescents from Diphtheria.—Valeri reports that tonsillectomy was done in 88 diphtheria convalescents from five to eight weeks after the outbreak of the disease to destroy the bacilli. In 52 of the 58 patients with pharyngeal diphtheria and in 21 of the 27 with nasopharyngeal diphtheria the bacilli disappeared within two weeks after the intervention. The results were good also in the 4 carriers operated on and in 2 of the 3 patients with nasal diphtheria. The control material of 600 diphtheria convalescents not operated on shows that the bacilli in diphtheria convalescents disappear more rapidly in cases treated with tonsillectomy. Five or preferably six weeks after the start of the disease is considered the time most suited for the operation.

Vertigo and Carbon Monoxide Intoxication with Vestibulocorticospinal Disturbance.—Nyman concludes that in vertigo of carbon monoxide intoxication the tipping and pointing reactions are not delicate enough to exclude higher vestibular changes of central origin and in part to localize these changes to the brain stem. Pathologic disturbance of the muscular tonus of central origin is regarded as the main cause of the disturbance of balance in cases of vertigo. The central disturbance may be a diffuse injury in the vestibulocorticospinal system, often with dominating functional changes of central origin.

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Book Notices

Extensile Exposure Applied to Limb Surgery. By Arnold K. Henry, M.B., F.R.C.S.I. Cloth. Price, $7. Pp. 180, with 127 illustrations. Baltimore: William Wood & Company, 1945.

This book on surgical exposure of deep-lying structures of the extremities would lose much of its charm and usefulness without the author's preface and introduction. In these few pages the purposes of the author are beautifully and forcibly portrayed. It is his intent not only to lead the surgeon to the lesion most anatomically but to show the operator how to extend his incisions.

The text is graphic throughout and is interspersed generously with the author's comments from well tried experience. Detailed directions are given for each approach, and the intensely practical discussions are well correlated with the drawings. The body of the text is well outlined and headed and paragraphed; all known methods of exploiting anatomic pathways, especially the cleavage lines and spaces, are described fully and graphically. The author's manner is conversational throughout, a feature which makes for easy reading and comprehending. His purpose is plainly that of teaching fundamental anatomy as it applies to surgery. The figures of speech he uses and his literary style make the book pleasantly readable.

The illustrations are admirable because they show the anatomic structures clearly. Wherever a maze of structures superimpose, the artist has illustrated them semidiagrammatically. The drawings are clearly leader lined and the captions are large and legible. Halftone cuts are used throughout, and the publishers have used paper of such a quality that the original drawings have lost little in reproduction. The legends and sublegends are adequately explanatory. Boldface type is used in the main legends, and the smaller type of the sublegends makes the drawings very clear. Together they epitomize the operative story.

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Narcotics and Drug Addiction. By Erich Hesse, M.D. Translated by Frank Gaynor. Translated, published and distributed by authority of the Alien Property Custodian. Cloth. Price, $3.75. Pp. 219. New York: Philosophical Library, Inc., 1946.

This pseudoscientific treatise, apparently prepared for popular consumption (in Germany), attempts to give an overall view of the pharmacologic agents used by man throughout the world to gain a subjective feeling of well being and help him forget his troubles. Material is presented on the chemistry, identification tests, pharmacology, abusive use, history, amounts consumed and effects of addiction. The drugs discussed are classified either as "truly dangerous poisons" or "relatively harmless ones." Among the former—or narcotics proper—are included opium and its derivatives, coca leaves and cocaine, mescaline, Indian hemp and intoxicating pepper. Alcohol, tobacco, the purines and cola are classed as "mere stimulants." The text represents a pitful attempt to cover an enormous subject. No new material is presented. Studies reported during the past decade are ignored. The discussions are often inadequate, and some errors in fact, translation or printing occur. The section dealing with the opiates is particularly inadequate and antiquated. The interested lay person would do much better to seek information in the Encyclopedia Britannica.

Exercises in Human Physiology (Preparatory to Clinical Work). By Sir Thomas Lewis, C.B.E., F.R.S., M.D., Physician in charge of Department of Clinical Research, University College Hospital, London. Cloth. Price, $1.25. Pp. 103, with 8 illustrations. New York & London: Macmillan and Co., Ltd., 1945.

This booklet contains thirty-three student laboratory exercises to be performed on human subjects, either the medical students themselves or their laboratory partners. The apparatus required is simple. The directions are clearly given in the well known literary style of the late author. The experiments include observations on vascular pulsation, blood pressure measurements, respiratory movements, effects of exercise, venipuncture, venous pressure, x-ray examination of the chest, electrocardiography, vasodilatation and sweating, colorimetry and blood flow, the plethysmograph, the capillary microscope, the triple response, reactive hyperemia, effects of ultraviolet light, paralysis of cutaneous nerves, cutaneous sensation, superficial and deep pain, referred pain and peripheral effects of drugs. It is stated by the author that this set of experiments is intended for the medical student in the transition stage between preclinical and clinical studies. The booklet will be valuable to all who are engaged in teaching medical students and especially valuable to teachers in internal medicine and physiology. The medical student will be impressed with the clarity and simplicity of the directions and the explanation of the observations. One anglicism, annoying to the American reader, is the expression of dosage in milligrams per stone of body weight.

A Standard Practice Manual for Use in State Hospitals for Mental Disorders. By Henry Lee Johnson, B.Sc., M.D., F.A.P.A., Assistant Superintendent, Western Oklahoma Hospital, Fort Supply, Oklahoma. Fabrikoid. Pp. 79. Fort Supply, Oklahoma: The Author, 1945.

This little volume is divided into two sections. The first, of thirty-nine pages, is designed for the physician in a hospital for mental diseases as a guide to the necessary clinical and statistical records and forms. The second section is a ward manual for attendants, designed to acquaint them with the practices of the hospital, rules and regulations, and instructions for emergencies. The volume is carefully compiled and can be adapted to most state hospitals. It is far from being a substitute for training courses for either physicians or attendants but serves a useful purpose as a reference guide, particularly for the latter. It should, indeed, be required reading for each new ward employee. Dr. Johnson has rendered a useful service to mental hospital administration.

Dystonia musculorum deformans. Por Austregesilo Jr., M.D. Pp 316. Rio de Janeiro: Irmaos Di Giorgio & Cia, 1945.

After a chapter reviewing the work published from Schwalbe and Ziehen till the present the author discusses cases reports of which have been published and 14 cases of his own. He admits the influence of the hereditary, familial and congenital factors in the idiopathic form and the infectious, toxic and vascular factors in the production of the symptomatic dystonia musculorum deformans. The chapter on symptomatology is long and didactic. In this chapter particular attention is merited by the studies of the cerebellar components. The author concludes that there are two types of torsion dystonia, idiopathic (Ziehen-Oppenheim's disease) and symptomatic. There are clinical and anatomic cases which must be included in the Wilson group. Dystonia musculorum deformans is essentially a morbid manifestation of the extrapyramidal system in spite of absence of unequivocal lesions. The lesions predominate in the basal ganglions, and the variety of localization in other centers explains the multiplicity of clinical motor manifestations.

Synopsis of Obstetrics and Gynecology. By Aleck W. Bourne, M.A., M.B., B.Ch., Consulting Obstetric Surgeon, Queen Charlotte's Hospital, London. Ninth edition. Cloth. Price, $5. Pp. 500, with 168 illustrations. Baltimore: William Wood & Company, 1945.

The mere fact that this is the ninth edition of this handbook affords proof of its usefulness and popularity. The author states that it is not intended as a textbook but rather as a supplement to a textbook and is useful for students preparing for midwifery examinations. For the sake of brevity all the material is presented in outline form. The few illustrations are small and simply executed. This compend is rather comprehensive, covering all of obstetrics including the newborn and gynecology. There is much that one could question, but most of the teaching follows accepted opinion on the continent. Most educators in this country have frowned on these medical digests prepared primarily to help students pass their examinations. They provide little to the medical education of their readers.

Regional Analgesia. By H. W. L. Molesworth, F.R.C.S., Senior Surgeon, Royal Victoria Hospital, Folkestone, England. Second edition. Cloth. Price, 8s. 6d. Pp. 92, with 42 illustrations. London: H. K. Lewis & Co., Ltd., 1946.

This edition has been published partly because many copies of the first edition were destroyed during the war. A few changes have been included in the book and in general it can be said that it reflects the author's personal experience with regional anesthesia in various parts of the body together with a short chapter on spinal anesthesia and description of technic. In general, it would hardly satisfy the anesthesiologist as we know him today.

Queries and Minor Notes

THE ANSWERS HERE PUBLISHED HAVE BEEN PREPARED BY COMPETENT AUTHORITIES. THEY DO NOT, HOWEVER, REPRESENT THE OPINIONS OF ANY OFFICIAL BODIES UNLESS SPECIFICALLY STATED IN THE REPLY. ANONYMOUS COMMUNICATIONS AND QUERIES ON POSTAL CARDS WILL NOT BE NOTICED. EVERY LETTER MUST CONTAIN THE WRITER'S NAME AND ADDRESS, BUT THESE WILL BE OMITTED ON REQUEST.

PREVENTION OF CONGENITAL MALFORMATION

To the Editor:—Please discuss preventive treatment for congenital malformations of the developing fetus in utero.

R. S. Averill, M.D., Lynden, Wash.

ANSWER.—According to D. P. Murphy (Congenital Malformations: A Study of Parental Characteristics with Special Reference to the Reproductive Process, Philadelphia, University of Pennsylvania Press, 1940, p. 97) the factors responsible for the production of congenital defects appear to be present in either the sperm or the egg cell prior to the time of fertilization. If this opinion is correct, a certain minimal number of congenitally malformed individuals will continue to be born at a more or less constant rate.

Two factors under human control can influence the birth rate of defective offspring. One of these is parental age, but only after 30 years of age does this factor assume any role in influencing the birth rate of congenitally malformed children. After this age there is a decided increase in the birth rate of defective offspring. For example, after the mother is 40 years of age the birth rate of congenitally malformed children is approximately three times the rate which is observed when the mother is less than 30 years old.

The second factor under human control which can influence the birth rate of malformed children is the previous birth of a malformed child in a family. In the general population a gross malformation, regardless of how slight, occurs with a frequency of about 1:200 live births. In contrast to this frequency, among the offspring of the parents of a malformed child, born subsequent to its birth, another malformed child will be born once in every eight births. In other words the parents of a malformed child are extremely likely to have another defective offspring.

Another factor which may influence congenital malformations is an attack of rubella in the mother during the first trimester of pregnancy. Avoidance of exposure to rubella during this period of pregnancy is therefore desirable.

There appears to be no way known at present to reduce the birth rate of congenitally malformed children except to follow the two suggestions mentioned, namely to limit reproduction to the years before 30 years of age, and for the parents of malformed children to have no more children.

DIZZINESS IN PREGNANCY

To the Editor:—What is the etiology, frequency and treatment of dizziness in normal pregnancy?

Donat R. Richard, M.D., Brooklyn.

ANSWER.—The symptom of dizziness or faintness is common during pregnancy, occurring on one or many occasions in the majority of women. There is no loss of consciousness but a feeling of lightheadedness. It is functional in origin, but a satisfactory explanation for its occurrence has never been given.

It is important to rule out organic disease whenever a patient complains of dizziness. It may be a symptom of anemia, cardiovascular disease, some abnormality of the eyes or ears or a manifestation of central nervous system disease. If there is no evidence of an organic basis for the complaint, simple measures usually suffice. The patient is reassured. She is told to sit quietly for a few minutes when the dizziness occurs. If these simple measures do not suffice, small doses of a barbiturate such as phenobarbital will be helpful.

X-RAY THERAPY FOR ATYPICAL PNEUMONIA

To the Editor:—What is the value of x-ray therapy in the treatment of atypical pneumonia? Would it be advisable to transport a patient by ambulance from home to an office for such treatment?

M.D., Arkansas

ANSWER.—On the evidence so far accumulated, it appears questionable whether x-ray therapy is of any value in the management of atypical primary bronchial pneumonia. Certainly the risk of transporting a sick patient to a hospital or office for x-ray therapy outweighs the possible value of the procedure.

BUTANE EXPLOSION BURN

To the Editor:—A patient received a second degree burn covering approximately 12.5 per cent of the body surface from the ignition of butane gas. Slight shock was present on admission and was treated with plasma. After recovery the patient was anesthetized and the burned area debrided and grossly cleansed. Petrolatum pressure dressings were then applied. Adequate amounts of plasma were given and other fluid balances were maintained. Penicillin also was administered. The urine output was good and there was no evidence of shock. However, the patient became unconscious twenty-four hours after admission, developed a fever of 102 to 105 F. and died sixty hours after admission. No autopsy was obtained. Is there anything peculiar about the physiopathology of butane burns?

M.D., Texas.

ANSWER.—The chemistry of butane or its combustion products does not explain the cause of the unexpected death mentioned in the query. Some special types of butane prepared for combustion purposes contain additives such as ether, but such additives are not known to introduce any factor which would influence the course of burns. Butane, a simple hydrocarbon, unit for unit, contains more British thermal units than its homologues methane and ethane, commoner constituents of combustion gas. For this reason the depth of a burn from butane might exceed that from equal flame exposure to the other gases mentioned. Butane does not possess any peculiar chemical property which may be regarded as significant in the fatal outcome of the case described.

TREATMENT OF STERILITY—TESTICULAR ATROPHY AFTER MUMPS

To the Editor:—Is there any treatment for bilateral testicular atrophy in a man aged 26 who is sterile after six years of marriage and who gives a history of double orchitis from mumps at the age of 10? He is well developed otherwise. Both testes are about the size of those of a 10 year old boy, or possibly a little smaller.

W. E. Anthony, M.D., Ottumwa, Iowa.

ANSWER.—If the patient has an azoospermia, treatment will not improve the condition. Apparently the patient has a testicular atrophy due to a previous orchitis. In such a condition there are extensive degenerative changes in the seminiferous tubules that cannot be altered by any treatment.

POSSIBILITY OF ADDICTION TO PAPAVERINE AND APOMORPHINE

To the Editor:—How long can papaverine hydrochloride in 60 mg. doses and apomorphine hydrochloride in 65 mg. doses be given without fear of addiction?

M.D., South Carolina.

ANSWER.—In Sollmann's Manual of Pharmacology, sixth edition, page 300, Himmelsbach is quoted as stating in 1937 that papaverine is nonaddictant. Apomorphine also does not produce addiction, since neither drug causes euphoria. The Federal Bureau of Narcotics has no record of addiction to either drug. They may therefore be administered without risk.

EFFECTS OF PENICILLIN AND SULFONAMIDES ON VIRUS PNEUMONIA

To the Editor:—Is there any experimental or clinical evidence to warrant the assertion that patients with virus atypical pneumonia are harmed by the administration of penicillin and/or sulfonamides?

M.D., Florida.

ANSWER.—While the evidence is plain that penicillin and/or the sulfonamides do not influence the course of atypical virus pneumonia favorably, there is no evidence that harmful effects have developed from the use of either one of these agents in the treatment of virus pneumonia.

DIAGNOSIS OF NEURODERMATITIS

To the Editor:—There are two signs which are valuable in the diagnosis of neurodermatitis which I do not believe have been reported to date and which are valuable enough in the diagnosis of this disease to bring it to the attention of other physicians. One of the chief characteristics of this type of dermatitis is the extreme itching that occurs. These persons are almost constantly rubbing their skin and irritating it. They often are found scratching at night when half asleep. One often sees them scratching while concentrating on various tasks such as reading. These persons seemingly never miss an opportunity to irritate their skin. The two signs based on this phenomenon are: 1. The patient will gently scratch the irritated areas if asked to demonstrate to a physician areas which itch. In other types of dermatitis the patient will point to it. 2. The nails of the patient are smooth and shining as the result of scratching with the flat (dorsal) surface.

H. L. Newbold, Lieutenant M. C., A. U. S.

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